



THE ASSAM GAZETTE

অসাধাৰণ

EXTRAORDINARY

প্ৰাপ্ত কৰ্তৃত্ব দ্বাৰা প্ৰকাশিত

PUBLISHED BY THE AUTHORITY

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No. 327 Dispur, Friday, 6th May, 2022, 16th Vaisakha, 1944 (S. E.)

GOVERNMENT OF ASSAM
ORDERS BY THE GOVERNOR
DEPARTMENT OF HOUSING AND URBAN AFFAIRS

NOTIFICATION

The 29th March, 2022

No.UDD(T)154/2022/7.—In exercise of the powers conferred by the Section 9 and Sub-section (1) of Section 10 of the Assam Town & Country Planning Act, 1959 (as amended) and (Assam Act II of 1960) read with sub-rule (1) of Rules 3 of the Assam Town & Country Planning (Publication of Master Plan and Zoning Regulations) Rules 1962, the Governor of Assam is pleased to publish the following notice regarding the publication of the Draft Master Plan for Barpeta Road.

Notice for publication of the Draft Master Plan for Barpeta Road

1. It is notified that the Draft Master Plan for Barpeta Road prepared under Section 9 of the Assam Town & Country Planning Act, 1959 (as amended) as described in the schedule below is here by published.
2. Any person or persons affected by the Draft Master Plan and the Regulation may submit their objections or opinions in writing to the Director of Town & Country Planning within two months from the date of publication.
3. The Draft Master Plan with all relevant papers and maps may be inspected free of cost during the office hours at the office of Director, Town & Country Planning, Dispur, Guwahati-6. Deputy Director, Town & Country Planning, Dist Office –Barpeta, office of the Chairman, Barpeta Road Municipal Board & Barpeta Road Circle Office. Copy of the Draft Master Plan is available in the office of the Deputy Director, Town & Country Planning, Dist Office – Barpeta for sale on payment.

SCHEDULE

A. SITUATION AND AREA

District:	:	Barpeta
Sub-Division	:	Barpeta
Police Station	:	Barpeta Road
State	:	Assam.
Aprr. Draft Master Plan area	:	25.68 Sq. km / 2567.81 hectares
Municipal area	:	4.25 Sq. km
Population	:	83,529 (as per Census 2011)

B. REVENUE AREAS INCLUDED IN THE MASTER PLAN AREA FOR BARPETA ROAD ARE:

<u>Mouza</u>	<u>Villages</u>
Gobardhana	Khoirabari, Nichuka 2 nd , Nichuka 3 rd , Monipur 1 st part, Monipur 2 nd Part, Uttar Aithaibari,
Howly	Kalah bhanga , Sat Bhanir Tup
Damka Chakabusi	Balar Bhita , Sengulia.

C. DESCRIPTION OF THE BOUNDARIES:

North	:	Village Domani
South	:	Village simlaguri, Village Jakhlipar
East	:	Village Athiabari, Village Jakhli BillorPthar , Village Merajar
West	:	Sengulia Village, Howly Mouza.

RAJESH PRASAD,
Principal Secretary to the Government of Assam,
Department of Housing and Urban Affairs.

1 Chapter : INTRODUCTION TO MASTER PLAN AREA

1.1 LOCATION AND REGIONAL SETTING

Location and Area: Barpeta Road Master Plan Area.

District: : Barpeta

Sub-Division : Barpeta

Draft Master Plan area: 25.68 Sq. km / 2567.81 hectares

Municipal area : 4.25 Sq. km

1.2 Population : 83,529 (as per Census 2011)

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Revenue areas included in the Master Plan area for Barpeta Road are:

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Gobardhana	Khoirabari, Nichuka 2nd, Nichuka 3rd, Monipur 1st part, Monipur 2nd Part, Uttar Aithaibari,
Howly	Kalah bhanga , Sat Bhanir Tup
Damka Chakabusi	Balar Bhita , Sengulia.

1.3 Brief History Of The Town And Surrounding

The origin of the town Barpeta Road was a small traditional village Athiabari. Athiabari was a small feudal kingdom of the famous Coch King Biswa Singh. The population of the village was thin and a mixture of a few households of Bodo, Santhal , Assamese, Nepali and Muslims families. So the cosmopolitan character of population of Barpeta Road is historical. The old Manas River flew through

Athiabari village. At present also Barpeta Road town is located on both the banks of the dead Manas river. The sub capital of the Koch King Narnarayan, Ghila Bijoypur and the royal palace of the king of the later Eastern Koch kingdom Koch Hajo, Raghudev at Barbarijahar were situated on the bank of this Manas river at a distance of 7 and 5 K.Ms to the south of Barpeta Road. Similarly, the capital of the last king of Barnagar, Chandi Narayan Barua was situated on the bank of this river at present Howly. Several severe earthquakes from the 16th century to the end of 19th century, particularly the earthquake of 1897 had caused devastating natural changes, the old river Manas dried up and the present Beki sprang up from the small spring Borjan.

Gobardhana, a place at a distance of 11 K. Ms to the north from Barpeta Road was the capital of Gobardhan Bhuyan. Raj Dhakmol, a place, 4 K. Ms from Gobardhana bears the old testimony to the present time. About 4 puras of land with a temple, surrounded by stone walls is seen as the capital of Sonaton, the king of Raj Dhakmol.

Rai Bahadur Durgeswar Sarma initiated the planning of modern Barpeta Road while he was the SDO of Barpeta Sadar Sub-Division from 1921 to 1923. The overseer of the Local Board Nandalal Mazumdar helped to make planning for transforming Athiabari into Barpeta Road. NF Railway contributed a lot for the establishment of Barpeta Road. The person who is associated with the establishment of Railway station at Barpeta Road was Lohit Ch. Nayak, an inhabitant of Barpeta and a member of the Legislative Council of Assam. He was well aware of the difficulty of boarding a train either at Sorbhog or Sarupeta station for a person of Barpeta locality and adjoining areas and so he requested the British Government and the Railway Authority to establish a Railway station in between Sorbbog and Sarupeta.

The British Government and the Railway Authority conceded the demand of Nayak and decided to establish a Railway station at Athiabari village in 1927 with the name Lohitpur to commemorate the name of Mr. Nayak. But when Mr. Nayak came to know it he opposed the idea and proposed the name of the station as Barpeta Road highlighting the name of the Xatra town Barpeta. This suggestion was accepted by the authority. Subsequently, Athiabari was transformed into Barpeta Road.

Till 1929, there was no Hat (market) at Athiabari. The only Hat was situated at Sengulia village at a distance of 3 K. Ms to the North West from Athiabari on the bank of the confluence of the river Beki and dead Manas. The village was not cosmopolitan and predominated by the immigrant Muslims migrated from East Bengal. As the Hat was at a reasonable distance from the Railway station and there was no suitable road from the station to the Hat the people of the locality demanded for shifting of the Hat to Athiabari and so they applied to the Chairman of Barpeta Local Board, Dhaniram Talukder. Accordingly the Hat was transferred to Athiabari in 1929.

By 1947 when India achieved independence from the British Imperialists the population of Barpeta Road increased to a significant extent due to the migration of people from within the sub-division particularly from Barpeta town and from East Bengal and Rajasthan provinces of the country. Today's Barpeta Road is a well known commercial center in lower Assam. In December 1959, Athiabari was formally declared Barpeta Road by a Gazette notification by the Government of Assam. Barpeta Road town was incorporated in the Barnagar Revenue Circle and Gobardhana Mauza. The first Mauzadar of

this Mauza was Mahesh Ch. Pathak , the father of ex-chairman of Barpeta Road Municipality Bidyananda Choudhury.

Preparation for forming the Barpeta Road Town Committee started in 1960. On 5th May 1961 , a general meeting was held with the order of the Government and at the initiative of the Local MLA Akshay Kumar Das , Mohanlal Choudhury, Apurba Kumar Brahma , Hanuman Prasad Agarwala and others. In the meeting , an adhoc committee of the Barpeta Road Town Committee was formed with Mohanlal Choudhury as Chairman, Hanuman Prasad Agarwala as Vice Chairman and Apurba Kumar Brahma , Ashwini Mazumdar, Hasan Ali and Baikunth Nath Das as member. On 1st June 1973 Barpeta Road Town Committee was upgraded to Municipal Board. On 7th February 1976 the new Municipal Board under the Chairmanship of Amulya Kr. Biswas took charge. Dhirendra Das was elected the Vice Chairman.

1.4 Location and Linkages

Regional Linkages

Barpeta Road Town being the commercial town of the District is trying to develop significant road and rail connectivity with the rest of the places.

Roads

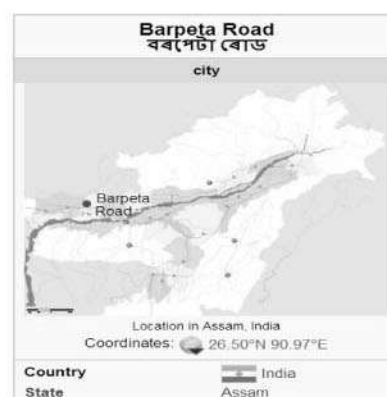
The Town lies beside National Highway 31. The town is at a distance of 135 km (84 miles) by road from Guwahati , the largest city in the region. National Highway 31 connects Barpeta Road Town with rest of the country in the west. Towards the north it has road connectivity with the neighboring country of Bhutan too. The inner arterial and connector roads have wide connectivity with the rest of the neighboring villages and towns. The town is at a distance of 21 km . from the district head quarter of Barpeta District. The town is the gate-way to Manas National Park. The town is one of the one of the most important place of western Assam and is ideal place for trade and commerce. It is referred to be the commercial capita of western Assam.

Railways

A broad gauge railway line connects Barpeta Road Town with major parts of India. By Railway the distance is 113 km, covered in two to three hours from Guwahati, the capital city of the state. It's a good source of transportation of goods to this commercial hub. Direct train service connects the town to Trivandram , Ernakulam, Bangalore, Chennai (in the south India), New Delhi, Kanpur , Lucknow (in the central India), and Kolkata, puri, Dibrugarh in east India.

Airways

Guwahati airport is the largest and the busiest airport nearing this place, which connects Guwahati to major cities in the country as well as to other major cities and towns in Assam. Its approximately 150 kms. from Barpeta Road Town.



Waterways.

The district was once well connected through river Brahmaputra. This route has been virtually closed and only fishermen use their boats for a livelihood though a few ferry services are still available to connect to this district towards the south.

1.5 Geographical location

Barpeta Road Town is located at 90°58 East longitude and 26°30 North latitude. The town is situated at a distance of 140 kilometers west of Guwahati, the Capital of Assam. It is located towards the north-western side of Kamrup district surrounded by Nalbari district in the east, Bongaigaon district on the west. It is 165 feet (50 meters) above the mean sea level.

1.6 Physical characteristics

Various physical characteristics of Barpeta Road town are described below in a tabular form

Parameter	Description
Topography	Mostly alluvial plains
Average Temperature	37°C (maximum), 8°C (minimum)
Extreme Months	July (Summer) and December (Winter)
Humidity	80% (Maximum)
Rainfall	2742 MM (Average)
Monsoon Period	May to September

1.7 NEED FOR THE MASTER PLAN

Barpeta Road Town, the commercial capital of Barpeta District, is the most important town in this District as well as the state in terms of its transport connectivity and strategic location. Responding to multifarious developments, internal and external, the town must respond to its existing problems, the new emerging socio-economic forces with a vision of its own. Barpeta Road , most importantly being a commercial centre of lower Assam should stand out among other business hubs and the town should perform its functions well an example to the other town of the State. Thus, the vision for Barpeta Road Town for its development through 2041 is:

Barpeta Road Town To Be

- a) One Of The Most Admired Commercial Hub Of the state.
- b) With A Unique Image of its Own.
- c) create livelihood to all the sectors.
- d) improvement of the existing infrastructure to facilitate future planning needs.
- e) slum free town.
- f) gateway to manas national park with a hygienic environment.

Vision being a cherished dream, to achieve this vision it is necessary to break it into a number of goals and subsequently to objectives.

The process can be further taken up as sector wise development plans and review of local area plans in subsequent 5 years term.

By proper policy planning and strict adherence of the land use zoning and building byelaws.

By submerging the planning with combing funds from the state as well as the centrally sponsored schemes.

1.8 FUNCTIONS AND NEEDS OF THE PLANNING AREA

The Master plan for Barpeta Road has been prepared considering the major functions of the planning area and future needs of the population of the area. Moreover the influence of whole Barpeta District over Barpeta Road planning area as its service area for spill over activities . Above all, the livelihood pattern of the indigenous aborigines are also given due consideration in formulation of the proposed land use plan to accommodate the future activities , which will meet the functional need of the area, and satisfy the aesthetic and emotional aspiration of the citizens.

1.9 Major functions of the planning area:

Based on the studies made over the existing situation and future needs, the Barpeta Road planning area can be inferred to have the following major functions.-

- a) To function as a trade and commerce centre.
- b) To function and grow as a growth centre for small scale and household industries.
- c) To function as growth centres for various services.
- d) To function as a recreational area suited for outings from the congestion polluted environment .
- e) To function as transportation node.

1.10 Plan period:

The growth of human settlement being a continuous process and for the purpose of preparation of this master plan, a twenty year time span up to 2041 AD is adopted to reflect the future requirements and needs of the area in an effective manner. However, it is a fact that the proposals cannot be entirely based on the requirements of the plan period alone ,as it is required to function with same or more efficiently even after the plan period with modification ,alternations to the existing plan as per the functional requirement of that time.

[illegible]

1991	2559	2360	322	300	530	471	57	57	70	66	1116	1024	565	496	80	69	38	29
2001	2776	2558	345	278	384	309	00	00	81	70	1205	1109	342	288	46	39	357	320
2011	2135	1890	521	444	471	399	54	40	439	382	1413	1249	696	641	120	91	274	250

Source: Census of India

Table: ST Population in Barpeta Road Master Plan Area

Year	Barpeta Road M.A		Uttar Athiabari		Kalah Bhanga		Manipur		Nisuka		Khaira Bari		Sat Bhanir tup.		Chengulia		Bala Bhita	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
1991	260	251	4	2	4	5	0	0	0	0	0	0	0	0	0	0	0	0
2001	385	402	0	0	4	3	0	0	0	0	0	0	0	0	0	0	0	0
2011	454	516	0	1	5	5	0	0	0	1	0	0	1	2	0	0	0	0

Source: Census of India

Table: Population 0-6 Years In Barpeta Road Master Plan Area.

Year	Barpeta Road M.A.		Uttar Athiabari		Kalah Bhanga		Manipur		Nisuka		Khaira Bari		Sat Bhanir tup.		Chengulia		Bala Bhita	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
1991	2433	2361	351	289	218	199	560	522	349	310	767	739						
2001	1986	1900	308	297	323	295	785	783	448	453	705	608	349	350	304	307	613	666
2011	1586	1485	320	326	537	539	1432	1438	662	665	740	634	452	467	313	316	705	640

Source: Census of India

2.2 Population Density

The density of population of the Master plan area was 2236 persons per sq. km. in the year 1991, which has been increased to 3252 persons per sq. km. in the year 2011. The density of population

2.3 Age-Sex Composition

TABLE: Sex Composition

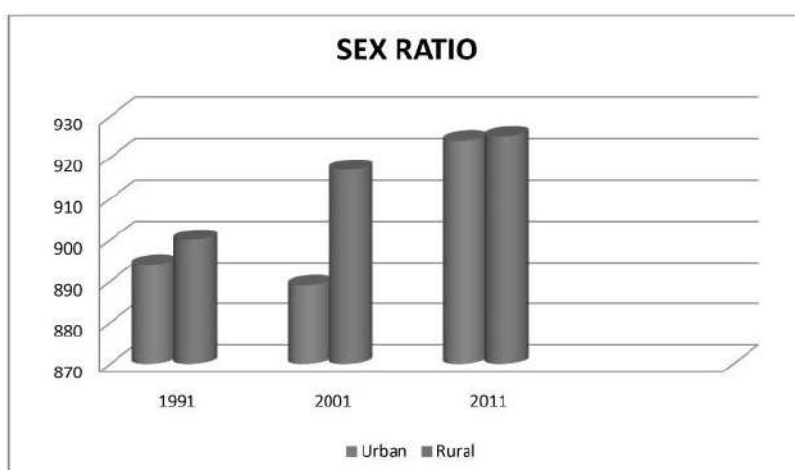
Year	Barpeta Road M.A. Sex Ratio	Uttar Athiabari Sex Ratio	Kalah Bhanga Sex Ratio	Manipur Sex Ratio	Nisuka Sex Ratio	Khaira Bari Sex Ratio	Sat Bhanir tup. Sex Ratio	Chengulia Sex Ratio	Bala Bhita Sex Ratio
1991	894	880	947	927	916	889	876	886	912
2001	888	892	940	933	898	912	899	931	938
2011	925	917	909	922	900	915	945	968	928

Source: Census of India

Study of Age-Sex composition of population shows that the proportion of population in the working age group 15-60 and old age group 60+ is increasing. This is indicative of the increase in the participation rate and need of more and better health infrastructure and recreational activities.

2.4 SEX RATIO

YEAR	URBAN			RURAL			MASTER PLAN AREA			% OF GROWTH
	Male	Female	Sex Ratio	Male	Female	Sex Ratio	Male	Female	Sex Ratio	
1991	15774	14101	894	14495	13054	900	30269	27155	898	
2001	18918	16807	889	19785	18130	917	38703	34937	903	0.55
2011	18489	17082	924	24919	23039	925	43408	40121	925	2.43



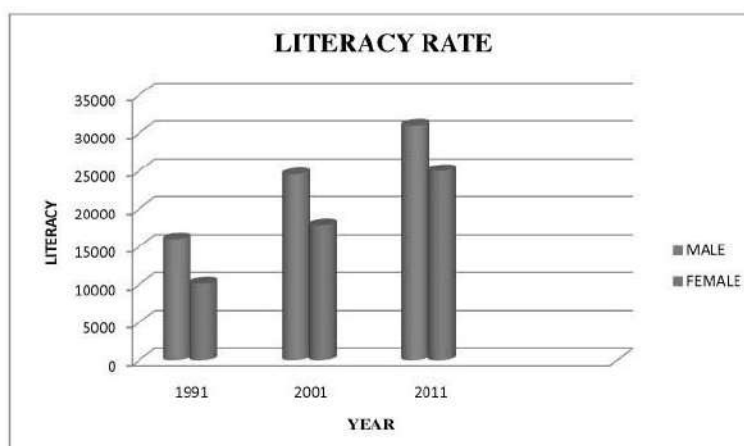
2.5 Literacy

As per the year 2011 census report, Male literacy rate of the town is 84.64% and the female rate literacy of the town is 75.95%. The total literacy rate of the town is 80.46% compared to national urban figure of 59.5%

Year	Areas	Person			Literates			% Of Literacy		
		M	F	T	M	F	T	M	F	T
1991	Barpeta Road M.B	15774	24101	29875	10709	7366	18075	67.89	52.24	60.50
	Uttar Athiabari	1925	1694	3619	1122	725	1847	58.29	42.80	51.04
	Manipur	749	711	1460	198	104	302	26.44	14.63	20.68

	Nisuka	2160	2003	4163	483	219	702	22.36	10.93	16.86
	Kalhbhanga	1484	1359	2843	589	330	919	39.69	24.28	32.33
	Khairabari	3800	3377	7177	1601	822	2423	42.13	24.34	33.76
	Chengulia	1143	1013	2156	361	159	520	31.58	15.69	24.11
	Bala Bhita	1789	1631	3420	409	149	558	22.86	9.13	16.31
	Sat Bhanir Tup	1445	1266	2711	520	257	777	35.98	20.30	28.66
2001	Barpeta Road M.B	18918	16807	35725	14789	11202	25991	78.17	66.65	72.75
	Uttar Athiabari	2677	2388	5065	1806	1124	2930	67.46	47.07	57.85
	Manipur	1108	1041	2149	354	254	608	31.95	24.40	28.29
	Nisuka	2992	2792	5784	943	538	1481	31.52	19.27	25.61
	Kalhbhanga	1870	1679	3549	956	558	1514	51.12	33.23	42.66
	Khairabari	4963	4525	9488	3072	2606	5678	61.90	57.59	59.84
	Chengulia	1459	1359	2818	665	444	1109	45.58	32.67	39.35
	Bala Bhita	2759	2587	5346	942	513	1455	34.14	19.83	27.22
	Sat Bhanir Tup	1957	1759	3716	1023	532	1555	52.27	30.24	41.84
2011	Barpeta Road M.B	18434	17055	35489	15602	12954	28556	84.64	75.95	80.46
	Uttar Athiabari	3180	2915	6095	2488	2033	4521	78.24	69.74	74.18
	Manipur	1702	1547	3249	954	750	1704	56.05	48.48	52.45
	Nisuka	4510	4158	8668	2593	1995	4588	57.49	47.98	52.93
	Kalhbhanga	2109	1899	4008	1471	1127	2598	69.75	59.35	64.82
	Khairabari	5333	4879	10212	3569	2839	6408	66.92	58.19	62.75
	Chengulia	1711	1657	3368	965	805	1770	56.40	48.58	52.55
	Bala Bhita	3559	3303	6862	1640	1281	2921	46.08	38.78	42.57
	Sat Bhanir Tup	2819	2665	5484	1684	1220	2904	59.74	45.78	52.95

Source: Census of India



2.6 WORKING AND NON-WORKING POPULATION (2011 CENSUS)

AREA	TOTAL POPULATION			WORKING POPULATION			NON-WORKING POPULATION			WORKER IN %
	TOTAL	MALE		TOTAL	MALE		TOTAL	MALE		
	FEMALE			FEMALE			FEMALE			
BARPETA M.B.	35571 17082	18489		13633	11436	2197	21938	7053	14885	38.33
MANIPUR	3246	1695	1551	959	892	67	2287	803	1484	29.54
SAT BAINIR TUP	5484	2819	2665	1960	1634	272	3578	1185	2393	35.74
NICHUKA	8673	4517	4156	3139	2529	610	5534	1988	3540	36.19
KALAHBHANGA	4024	2119	1905	1307	1143	164	2717	976	1741	32.48
CHENGULIA	3368	1711	1657	965	923	42	2403	788	1615	28.65
BALABHITA	6862	3559	3303	27	24	3	126	50	76	0.39
UTTAR ATHIABARI	6091	3170	2921	2141	1921	220	3950	1249	2701	35.15
KHAIRABARI	10210	5329	4881	3425	3059	366	6785	2270	4515	33.54

Source: Census of India

2.7 Migration Population.

It is observed from the transportation survey that besides the normal population housed in the town, there is a floating population of about 7%, which comes to Barpeta Road Town for daytime activities. Thus, the daytime population in Barpeta Road in 2011 is estimated as 38000.

2.8 Population Projection

Table : Decadal Population in BRMPA

Sl. No	Year	Barpeta Road Municipal area	Uttar Athiabari	Kalahbhangga	Monipur	Nisuka	Khairabari	Chengulia	Bhalarbhita	Satbhanirtup	Total BRPA
1	1991	29875	3619	2843	1460	4163	7177	2156	3420	2711	57424
2	2001	35725	5065	3549	2149	5784	9488	2818	5346	3716	73640
3	2011	35571	6091	4024	3246	8673	10210	3368	6862	5484	83529

Source: Census of India

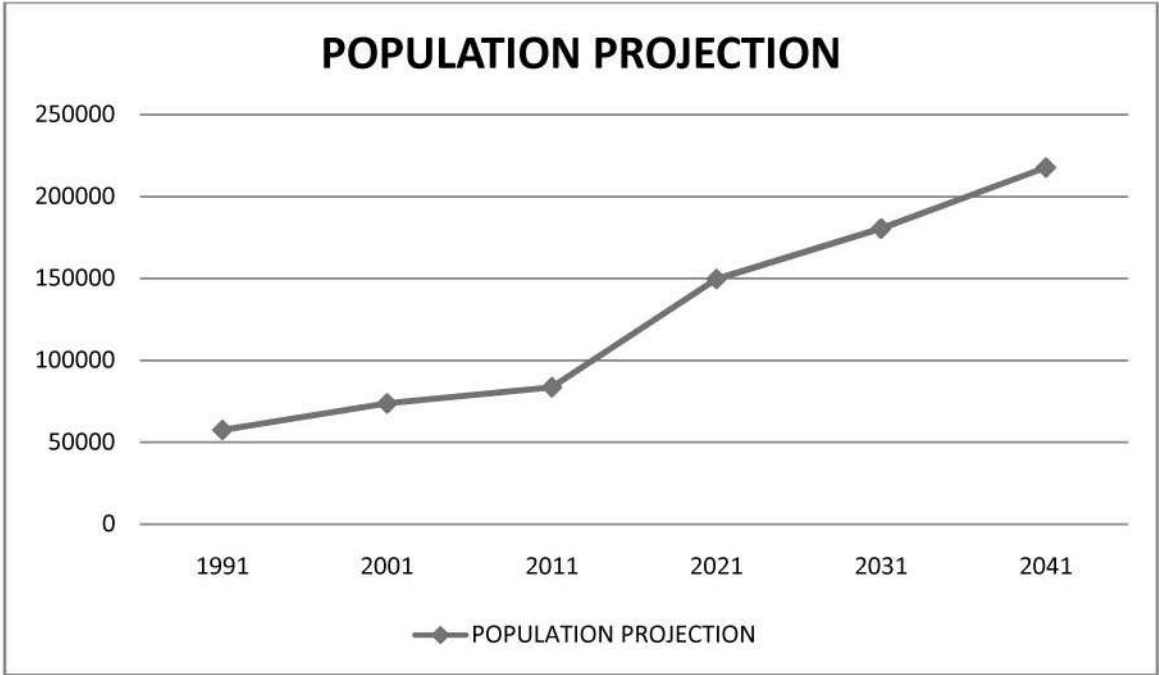
On the basis of the statistics found, it can be concluded that there is a scattered development from the main town area. The density has inched and people prefer to settle in the surrounding villages which is less developed but less from the chaos.

Based on the past population growth trends— low, medium and high – population estimate for Barpeta Road Planning Area for the period 2022 to 2041 have been worked out. It is estimated that the population of BRPA may vary from low of 1.50 lakhs to a high of 2.20 lakhs in 2041. A medium projection of 2.17 lakh for BRPA for the perspective year 2041 is adopted and the same is used for the planned development of BRPA. Ten yearly estimates of the population are given. Refer to Table below

Table: Population estimates in BRPA -2041 at 10 yearly intervals

Year	Population in BRPA
1991	57,424
2001	73,640
2011	83,529
2021	1,49,589
2031	1,80,426
2041	2,17,620

Source: Calculations based on exponential growth method.



3 Chapter : Economic Base And Employment

The economic growth of Barpeta Road has been driven by both Formal and Informal sector of economy. Mainly it can be characterised as a developing market economy.

Economic base of any place refers to companies and any other employers that generate lots of jobs in a local or regional areas. These are usually includes government and civil service department , companies , industries , trade and agriculture etc. More than 65% of the Barpeta Road Master Plan Area is rural and 70% of this depends on agriculture.

One of the most vibrant economic Zones is the entire region Barpeta Road is a forerunner of the economic activity. Famous all over the region up-to West Bengal for Rabi crops and vegetables, the daily transaction of vegetables at Barpeta Road wholesale market is to the tune of around 200 Metric Ton. The Town has 8 (eight) mustard oil mills and a score of smaller industries. Famous for rice all throughout the region, supplies from Barpeta Road go up-to remote comers of Northeast.

Barpeta Road is also one of the biggest wholesale markets of clothes and leather products. The retail business in Barpeta Road can be gauged from the number of shops, which is around 1748 in number. Barpeta Road Municipal Board has a Market of 312 shops and 50 numbers of platforms for vegetable vendors but it is grossly inadequate for the level of economic activity that is observed. Barpeta road is also the market for poultry, dairy and fishery products, which are brought from the villages of that area.

3.1 FORMAL SECTOR OF ECONOMY

People working in civil service , public sector units ,government service , defence ,multinational companies , school , colleges, research institutes , management organizations , bank etc. all belongs to Formal Sector. This sector encompasses all jobs with normal hours and regular wages and are recognized as income sorces on which income taxes must be paid.

3.2 OFFICES

There are around 20 nos. of Govt. offices within the Master plan area , which includes Central Govt offices / establishments like

1. SDO & ESD Sub Division.	Ward No. 1
2. A Janata Bikash Nidhi .	do
3. B. D. O. Gobardhana, Gobardhana Dev. Block.	Ward No. 2
4. Extension Officer ,Veternary Dev. Block , G.D.B.	do
5. Extension Officer ,Agri. G.D.B.	do
6. Assistant Engineer , Manash Sub - Division , C.W.S.	do
7. The Block Mission Co- ordination , Block Resource Centre Gobardhana.	do

8. Rly. Offices and Rutter.	d0
9. C . I . Rutter.	do
10. Field Director ,Tiger Project .	Ward No. 4
11. Range Officer , Forest Range Office.	d0
12. Er /En , Pasumsra Rupashi Division (Irrigation) .	do
13. Assistant Engineer ,Barpeta Road (Irrigation) , Sub Division .	do
14. Superintending Engineer , North Western Project Circle (Irr) .	d0
15. E/E Lower Assam Investigation Divisonal W. R. Dept.	do
16. Asst. Eng. Stcc. sub Division .	do
17. Forest Range Officer ,Social Forest Range .	Ward No. 5
18. S.P.O.(T) BPRD	do
19. S.D.E. (CDOT) , BPRD.	do
20. Supdt. of Post Offices, Barpeta Division.	do
21. H. director Of Ivory Service .	do
22. P . W. D. Barpeta Road .	do
23. Rly. Office.	Ward No. 5
24. B.D.O. ,Distict Animal Husbandary Of Vet. Offices.	Ward No. 6
25. E/E B.U.W.S .and S. Board .	do
26. S.D.E. (C Dot) , Barpeta Road Office (Telecom) .	do
27. Officer Incharge ,Circle Inspector Of Police .	do
28. Ofiicer In Charge ,Barpeta Road Police Station .	do
29. O/O Tourism Source Officer , Barpeta Road.	do
30. Superintending Officer, Govt. Hospital, Barpeta Road .	do

3.3 EDUCATIONAL INSTITUTE -

1. Sajanakanta H.S. School .(p) B-180 ,G- 199
2. Kalahbhanga High School. (P) B - 39 , G - 32.
- 3 .G.N. Bordoloi Memorial High School (P) , B- 292 , G - 264.
4. Dr. K. K. Das Memorial Girls High School , (P) , G - 431.
- 5 .Shri Hindi High School, Barpeta Road , (R) B- 42 , G- 39.
6. Uttar Barpeta Road High Madrassa (R) , Khairabari , B -42, G- 49.
7. Barpeta Road Bodo High School (R), Khairabari , B- 49, G- 39.
8. Nichuka High School (R) , B- 42 , G- 38.
9. Janakalyan High School (R) ,B- 42 , G- 39.
- 10 .G.L.C. College , Barpeta Road.
11. S. T. Josheph High School (P) , B- 280.

3.4 Industries:

Industries are momentum of economic growth. They provide employment to growing population and also bring in other economic activities in their forward and backward linkages.

There are no large scale industries as such in this town. Few of the industries are operated mostly from the housed within the town area. Those can be continued as far as the environment is not at risk. They are small and medium scale production and packaging industries only.

An SEZ measuring around 55.63 hactare is proposed for development in the Town III in the South West, which will also include the industrial activity. No new heavy industries to be located in BRPA.

As per record of DICC Barpeta, following are the category wise registered ongoing industries.

Sl. No.	Sector	Type Of Industries	NO. Of Units
1. AGRICULTURE			
1.	Barpeta Road M. B.	Rice Mill	2 Nos.
		Attachaki	1 NOs.
		Backery Unit	--
		M. Oil	--
		Spice Grinding	1 Nos.
2.	Sat Bainir Tup	Rice Mill	2Nos.
3.	Balabhita	Bakery	2 Nos.
4.	Khairabari	Rice Mill	1 Nos.
2. FORESTRY			
1.	Barpeta Road M. B.	Wooden Furniture	2 Nos.
		Stone Crushing	1 Nos.
2.	Kalahbhanga	Stone Furnishing	1 Nos.
3.	Sat Bainir Tup	Wooden Furniture	1 Nos.
4.	Khairabari	Stone Crushing	3 Nos.
5.	Balabhita	Wooden Furniture	2 Nos.
6.	Uttar Athiabari	Can & Bamboo	81 Nos.
		Wooden Furniture	1 Nos.
3. INDUSTRY			
1.	Barpeta Road M. B.	Steel Industries	1 Nos.
2.		Various	10 Nos.
	Kalahbhanga	Steel Industries	1 Nos.
3.		Various	1 Nos.
4.			

5.	Khairabari	Various	7 Nos.
6.	Uttar Ahtiabari	Various	3 Nos.
	Sat Bainir Tup	Various	2 Nos.
	Balabhita	Various	3 Nos.
	4. MINERAL		
1.	Uttar Athiabari	Kind of Items	1 Nos.
	5. OTHERS		
1.	Barpeta Road M.B.	Casset Recording	1 Nos.
2.	Kalahbhanga	Do	1 Nos.

Source: D.I.C.C., Barpeta.

Other industrial units of the planning areas are tailoring, readymade garments, embroidery, handloom, spice grinding, repairing of 4 wheelers and 2 wheelers, DTP works, cement concrete products.

Major industrial activities of diversified nature are developed along the market centre, featuring in Khoirabari, Nichuka 2nd, Nichuka 3rd, Monipur 1st part, Monipur 2nd Part, Uttar Aithabari, villages. The principal types of industries of this area are coke, manufacturing industries. Different types of industries of the area ranges from medium scale to small scale industries and from Red category industries to green category industries.

There is no earmarked industrial growth centre and commercial estate at present.

3.5 Fisheries

The following villages within the master plan area viz. Khoirabari, Nichuka 2nd, Nichuka 3rd, Monipur 1st part, Monipur 2nd Part, Uttar Aithabari, have immense potential for fishery development. The existing fishery of the potential villages is as follows.

Sl. No.	Description	Nos.	Total Area(Ha)	Productivity/Capacity	Total Production
1	Ponds & Tanks	129	40.82	2500 /Kg/Ha/Year	10 2050 Kg.
2	Fish seed Hatchery	-	-	-	-
3	Nursery tank	23	1.49	20 Lakhs/Ha/Year	129.80 Lakhs

Source: District Fishery Dev. Office.

There are number of tanks for productions of large sized fish seed (fingerling) fair stocking the piscicultural tanks. The present productivity of fishes is only 2500 kg/ha/ year and 20 Lakhs /Ha/Year in Nursery tank, since traditional type of pisciculture is followed in most of the villages. The potential production may be increased to 5000 kg/ha/year if semi – intensive camp culture is adopted.

As per District Fishery Development Officer, Barpeta, to augment fish production and to increase productivity, rearing tank (2 hectare) to produce fingerling and new ponds (6 hectare) of carp culture are to be constructed. Existing ponds (40.82 hectare) are to be developed and extended. Integrated pig cum fish centre should be encouraged as the areas are suitable for this purpose.

3.5.1 Farming:

Live stock and poultry occupy important places in the economic life of Barpeta road master plan area. Cattle, buffalo, goat, piggy etc. are the most common live stock animal of the area.

3.5.2 Wholesale Trade

There are two wholesale market associations dealing in almost all types of trade and business activity in BRPA. Wholesale Trade in Barpeta Road Planning Area is to be organized for the following activities:

- a) Food grains and perishable items
- b) Fruit & vegetable market
- c) Hardware and Building materials
- d) Motor parts
- e) Coal Market
- f) Timber Market
- g) Wholesale Fish
- h) Wholesale cloth

Their locations and the major related issues are as given in the following table:

Sl No	Name & type	Location	Issues/ Remarks
1	Wholesale markets of food-grains and perishable items	Wholesale market at ward no 1	Lack of basic services No arrangements for loading-unloading platforms and parking of vacant trucks Intermixing of goods and other traffic. Absence of proper solid waste management
2	Hardware and Building materials (Wholesale and retail)	Kalibari road, Mathura mohan Hituhi path Namghar path	1 .Lack of basic amenities. 2 No proper arrangement solid waste management 3.Congestion and spill over of activities
3	Motor Parts (Wholesale-cum-retail)	NH- 31 both side at Simlaguri Ward no 6& 10	Lack of basic services No arrangements for loading unloading platforms and parking of vacant trucks Intermixing of goods and other traffic. Absence of proper solid waste management
4	Rice market	Main market along the Jain Mandir Road	1.Lack of basic amenities. 2 No proper arrangement solid waste management 3.Congestion and spill over of activities

5	Whole sale market of BAMBOO and Banana market	Mainly in Ward No 6 nearby Stadium area	No systematic platform arrangement for this purpose
6	Wholesale & Retail sale fish market	Near Main market Bazaar area in ward no 6	Lack of basic services No arrangements for loading-unloading platforms and parking of vacant trucks Intermixing of goods and other traffic.
7	Wholesale Cloth Market	Main Bazaar Area. Mathura Mohan Hituhi path Kalibari Road	Overcrowded and needs expansion

3.6 Area Requirement Of Wholesale Market -2041

The fundamental objective of wholesale markets is to improve efficiency in the goods distribution .By centralizing transaction at a single location ,reducing the period of transactions , and separating wholesale and retail function in the distribution system , wholesale markets promote greater transparency and better price formation through a clearer interplay of supply and demand.

Total employment in Trade and Commerce is estimated at 30% of the total employment in BMPA . Considering the Wholesale employment at 14.89 percent of the trade & commerce employment, the area requirement for wholesale markets works out to 92 ha.

3.7 Haulage Complex cum Wholesale Market

The Master Plan proposes to develop a new Integrated Haulage Complex including Wholesale Markets near N.H.31 in the southern side of BRMPA and near Uttar Athiabari. This location provides appropriate linkages for the incoming goods, outgoing goods and distribution of wholesale goods in the city. In the Haulage Complex, the Wholesale business could be operated more efficiently in a better environment. Basic functions of the Haulage Complex cum wholesale market are

To provide facilities for carrier movement;

To provide warehousing and storage facilities and interlink these with the wholesale markets;

To provide servicing, lodging and boarding, idle parking, restaurant, and other related functions in the complex.

Sl. No.	Use Type	% of area	Area (ha)
	Wholesale Market and warehousing	53.0	48.76
	Transport Agencies	2.0	1.84
	Commercial and Public & Semi Public	5.0	4.6
	Utilities & Services	3.0	2.76
	Parking	12.0	11.04
	Circulation	25.0	23.00
	Total	100.0	92.0

3.8 Existing Wholesale Market

The existing wholesale market of Barpeta road in ward no. 6, locally named Chandi Market plays an very important role in distribution of supply and demand. Till such time the new wholesale market at New Place is developed, the wholesale market activity is to continue from the existing areas. Construction Work of a Multi Utility Building is going on. After the development of the new wholesale market, the existing wholesale market area would be used for retail activity, thus not allowing the movement of any heavy and medium commercial vehicles in the central town area.

3.9 Retail Trade

Retail shopping areas are important as these create an image of the city. In BRMA retail shops are spread all over the town; however, the core busy area is the major town level retail trade centre.

To accommodate the required shopping, commercial offices, and other activities like cinema, hotel and related facilities, the following three-tier system of commercial development is proposed.

Community level - Whole of the town including the four New villages

Neighbourhood level

Cluster level

Tiers I, II and III—Community Shopping Center, Neighbourhood Shopping Centres and Housing Area
Cluster Shopping Centres

The Community/commercial Centre would be a modern commercial centre with multi-storey commercial buildings and shall have major retail shopping areas, multi-storey commercial offices, banks, hotels, restaurants, and cine complexes. The Commercial Centre along with the City Facility Centre and Recreational Centre shall together form the new City-Centre

Table: Three-Tier Hierarchy of Commercial Activities

Community Commercial Centre	Neighbourhood Commercial Centre	Cluster Centre
Tier I	Tier II	Tier III
Population Served		
About 1 lakh	About 15 thousand	About 5 thousand
Area		
5.4 hectare	0.46 hectare	0.11 ha
Land Requirement Per Thousand Persons		
540 Sqm.	306 Sqm.	220 Sqm.

3.10 INFORMAL SECTOR

An Informal economy is the part of any economy that is neither taxed nor monitored by any form of Government. Although the informal sector makes up a significant portion of the economics in developing countries that provides employment, livelihoods and income for millions workers and business owners. This relates to its employment potential as well as its role in inclusive growth and poverty reduction.

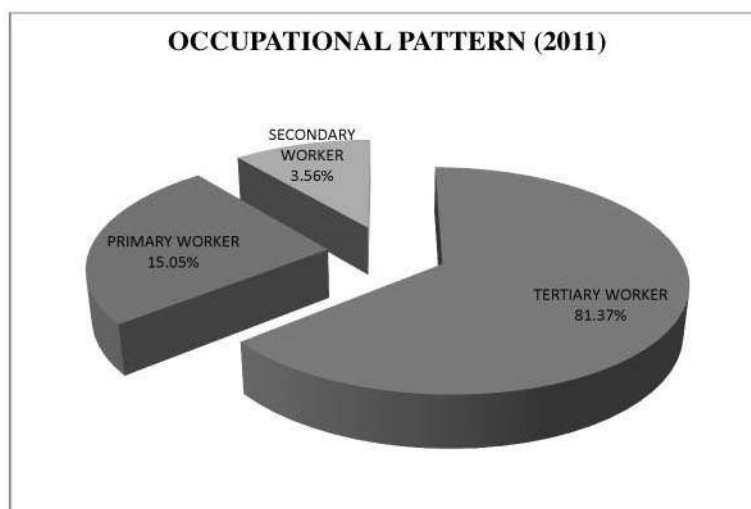
The town has a weekly market in the core area near the playground which is located just .7 Km from main bus terminus. The market is held twice in a week. People from the whole of Barpeta District as well as the nearing places go to this market, the specific attention being local goods at cheap prices.

The weekly market, is proposed to function from Facility Centre III after its development. Such other weekly markets could operate from the parking areas of the Commercial Centres on the weekly off-days.



3.11 OCCUPATIONAL PATTERN (2011 CENSUS)

AREA	PRIMARY CULTIVATORS/AGRICULTURAL LABOURERS	SECONDARY (HOUSEHOLD INDUSTRIES)	TERTIARY (OTHER WORKERS)	(TOTAL) MAIN WORKER
BARPETA RD.	116 (0.95%)	239 (1.96%)	11831 (97.09)	12186
MANIPUR	268 (28.81%)	104 (11.19%)	558 (60%)	930
SATBAINIR TUP	271 (17.00%)	26 (1.64%)	1297 (81.36%)	1594
NICHUKA	1508 (56.78%)	138 (5.19%)	1010 (30.03)	2656
KALAHBHANGA	400 (32.10%)	175 (14.05%)	671 (53.85%)	1246
CHENGULIA	450 (47.02%)	9 (0.94%)	498 (52.04%)	957
BALABHITA	18 (66.67%)	0 (0%)	9 (33.33%)	27
UTTAR ATHIABARI	47 (2.32%)	27 (1.33%)	1955 (96.35%)	2029
KHAIRABARI	625 (21%)	160 (5.38%)	2191 (73.62%)	2976



ESTIMATED OCCUPATIONAL PATTERN OF BARPETA ROAD MASTER PLAN AREA:

CATEGORY	2011		2021		2031		2041	
	% of Workers	No. of Workers	% of workers	No. of workers	% of workers	No. of workers	% of workers	No. of workers
PRIMARY	15.05	3703	16.02	5582	16.47	7871	17.97	10570
SECONDARY	3.56	878	10.14	3534	10.59	5063	15.19	8936
TERTIARY	81.37	20,020	73.82	25710	72.92	34844	65.12	38288
TOTAL		24,601		34,826		47,778		58,794

Primary, Secondary and Tertiary sector denotes only cultivators/agricultural labourers, workers in household industries and other workers respectively in 2011 census.

4 Chapter : Housing and Shelter

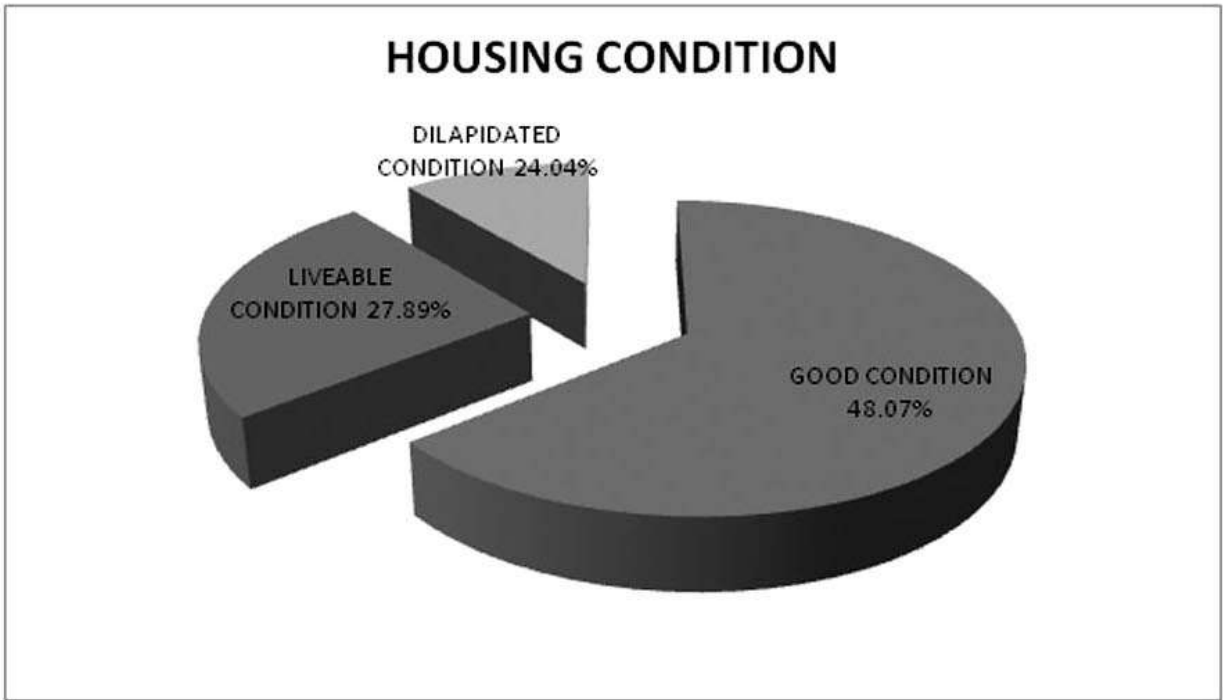
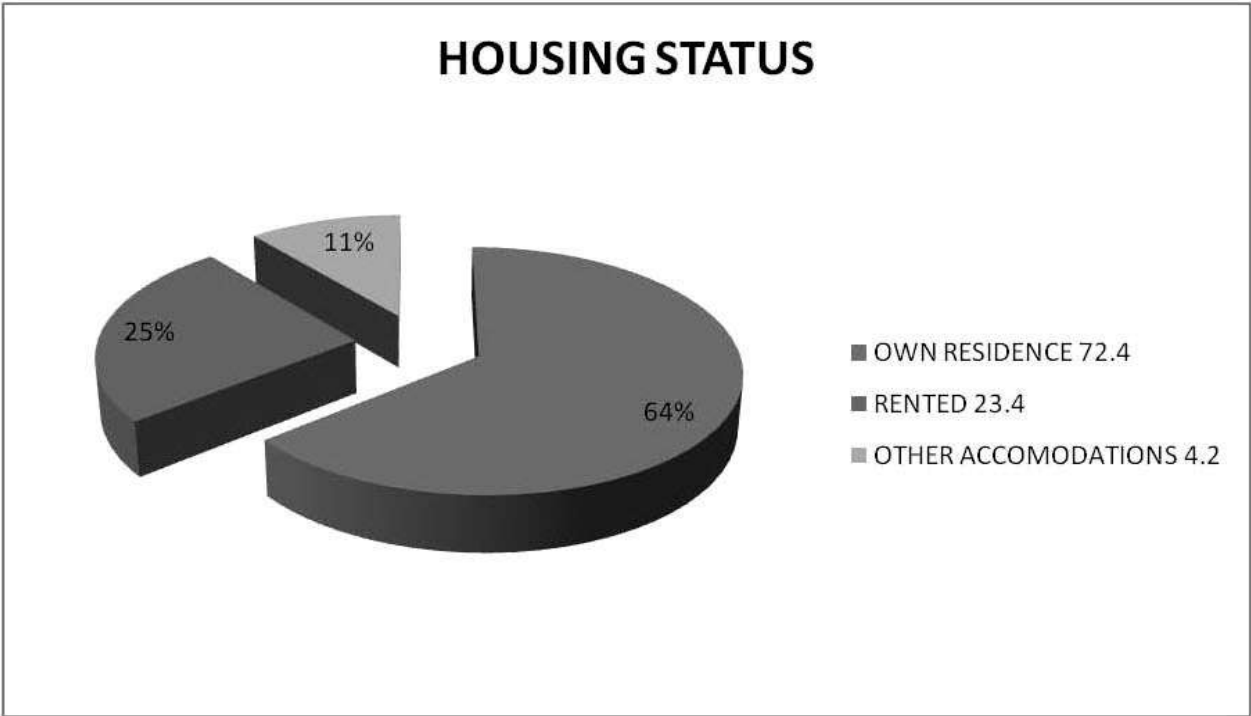
4.1 Housing Scenario

A number of housing clusters have mushroomed in and around various city centres in haphazard and unplanned manner , without a proper layout and devoid of service lines and other essential facilities . These unauthorized developments are encroachments on land parcels belonging to Govt. bodies , public private institutes or areas meant to be green belts. Therefore massive concerted effort need to be made. The remedies would include ensuring that the Master plan as well as Zonal plan and local area plan being made , so that adequate provision is made for the homeless as well as slum dwellers. Should identifying city specific housing shortage and preparing city level Urban Housing & Habitat Action plan for time bound implementation.

To promote in-situ-slum up-gradation with partnership between the central Government . State Government ,urban local bodies ,self / private Builders etc.

It is a known fact that cities are facing a major problems regarding Housing Affordability among the Low Income Groups (LIG) and Economically Weaker section (EWS) . High cost of housing rent and development has forced these group to squat inside the city urban areas who illegally claim uninhabited land , leading to slum development . The housing condition worsens in due course of time , due to un-affordability in maintenance and bad structure , migration to rural to urban areas and income expenditure imbalance.

In 2011, Barpeta Road Master Plan area contains 17, 141 housing units out of which 15,121 units are exclusively residential and 2020 are put to residence-cum-other uses. Out of the total housing, 72.4% households live in owned residences, 23.4% in rented and 4.2% in other accommodations. Out of the total 17,141 residences in 2011, 8,240 (48.07%) are of good condition; 4,780 (27.89%) of liveable condition and 4,121 (24.04%) in dilapidated condition. 55% of the population lives in one- or two-roomed accommodation; 27.7% in three- or four-roomed accommodation and 17.3% in 5-roomed and above.



4.2 Housing Supply Mechanism (Private sector participation)

Privatisation in the form of individuals and builders/developers should be encouraged to participate in the house building activity. The Development Authority could provide land with offsite physical and social infrastructure for the private entrepreneurs to invest in house building and onsite infrastructure development. Also developed individual residential plots could be provided to families where more than one dwelling unit could be constructed.

Housing has four distinct components for its development i.e., Land Assembly, infrastructure provision, building construction and post occupancy management. The following diagram gives an idea how these activities should be distributed amongst the Government, private and cooperatives making the Government a facilitator for housing development.

4.3 Concept of land pooling

As per the survey conducted by Town and Country Planning, Barpeta, it was observed that few neighbourhoods in the villages included in the BRMP are not deficient of housing but these are cases of non development of these areas may be due to lack of awareness of education. So the people are staying in houses which are made of locally available materials. The economic conditions and livelihood for these families still is agriculture and day to day informal business. The main need of the hour is to impart awareness among these masses that where they are residing in not sustainable and pose a threat to their lives. There is an urgent need to upgrade these houses as they have the tenure ship but their economic progress make it hard for them to do the same.

4.4 Housing – BRMP 2041

4.4.1 Household Size

As per 2013 survey conducted by Town and country planning, Barpeta, the average household size in BRMBA is 5.36

4.4.2 Housing Status:

As per the census records 2011, there are 4,462 numbers of households in Barpeta Road Municipal area.

NO. OF WARD	TOTAL NO. HOUSE HOLD	R.C.C. (R)	R.C.C. (C)	R.C.C. (R.C.C)	R.C.C. (RENTED)	AT (R)	AT (C)	AT (RCC)	AT (RENTED)	AT (K & R)	AT (K) C	AT (K) R.C.C	AT (RENTED) K & R	CHAPRA (R)	CHAPRA (C)	CHAPRA (RCC)	CHAPRA RENTED (R)
1	657	14	1			196	13			110	2			315	6		
2	442	27	3			202	20			51	8			116	15		
3	542	82	4		1	279	4		1	91	12			65	3		
4	540	37	5	2		173	26	5		145	17			123	6	1	
5	207	42	22	22		33	14	4	2	42	37	1	3		12		1
6	129	42	40	20		58	42			37	51		1	7	33		
7	412	72	7	4		224	16	2		127	7				7		
8	545	50		1		317	2	4		101				11			
9	508	20	1	2		197	18	5	1	120	8			22	6		2
10	480	25	25	4		156	13	14		153	4	6		61	19		

Total-

4,462

R for Residential

C for Commercial

K for Kucha

The main reasons for smaller household size is single person resulting in low sex ratio and smaller family size. For 2041, a household size of 4.4 has been adopted to work out the housing requirement.

4.5 Slums

4.5.1 Existing slum areas

The Census of India 2001 has proposed to treat the following as 'Slum' areas: -

All areas notified as 'Slum' by State/Local Government and UT Administration under any Act;

All areas recognized as 'Slum' by State/Local Government and UT Administration which have not been formally notified as slum under any Act;

A compact area of at least 300 populations or about 60-70 households of poorly built congested tenements, in unhygienic environment usually with inadequate infrastructure and lacking in proper sanitary and drinking water facilities.

According to the information provided by the Barpeta Road Municipal Board, Barpeta Rd, Assam, there are 4 slum pockets in the BRMBA area housing around 3500 (about 10% of the total population). Refer to Map 8.2 for location of slums in BRMBA

4.5.2 National Slum Development Program

The components of this program include:

- a) Provision of physical amenities like water supply, storm water drains, community bath, widening and paving of existing lanes, sewers, community latrines, street lights, etc.
- b) Community Infrastructure: - Provision of Community centers to be used for pre-school education, non-formal education, adult education, recreational activities etc.
- c) Community Primary Health Care Centre Buildings to be provided
- d) Social Amenities like pre-school education, non-formal education, adult education, maternity, child health and Primary health care including immunization etc.
- e) Provision of Shelter: The Scheme to have a component of shelter up-gradation or construction of new houses as may be required.

4.5.3 Concept of City without Slums

The Asian Development Bank through a study has worked out comprehensive guidelines for the program – 'City without Slums'. One of the major objectives of such a program is eradication or significant reduction of poverty of urban areas. Besides this, the other objectives are to ensure the following:

- a) Security of tenure;
- b) Minimum acceptable standards of municipal infrastructure and social services;
- c) Improved employment and income earning opportunities;
- d) Improved education, skills, training and health care;
- e) Better access to credit and other financial services for house/plot purchase, home improvement, enterprise development and livelihood activities, and
- f) Improved level of community organization capacity and empowerment.

The above objectives are inter-sectored and inter-departmental. To facilitate the above, the following is envisaged .

In case of existing slums, which are on Government lands that are not needed for development of any infrastructure or other urban activities, plans for upgrading of slums may be prepared and implemented.

Other slum pockets may be resettled at appropriate areas with due consideration of their distance from work places.

In all new housing schemes, at least 30% of total housing shall be one-roomed houses, part of which will go to the urban poor generally living in slums. These may be provided with cross-subsidy.

In any new land development scheme, 1% of the total land shall be reserved/developed for informal sector/vendor markets, which should be available to the urban poor families to conduct their livelihood earning activities. Such a land can be for informal sector units in food/vegetable/eating stalls and any other activities. Part of the land shall be developed for night shelter where fresh migrants to the city, having no shelter, could be provided with facility to sleep and have sanitation and bathing facilities.

4.6 Housing Stock ,Shortage and Need Assesment.

Housing shortage in Barpeta Road Master Plan Area in 2001 is 10,161. Census data on the number of households, number of residential houses is as follows:

A.	Total no of households	17,141
B.	Total number of residential houses and houses used for residence-cum-other purposes	17,001
C.	Backlog of housing required (A-B)	140
D.	Dilapidated houses (Residence and Residence-cum-other uses)	4,121
E	Total Housing Shortage in 2011 (C+D)	4,261
		(24.86% of the households)

Based on the above, in 2011 the housing shortage works out to 4,261.

The projected housing requirement in BRPA area in 2041 is as under:

Projected additional population for 2041	1,34,091
Additional households between 2011 and 2041 @ 4.4 persons per household	5,900
Housing shortage in 2011	4,261

Need for additional dwellings between 2011 & 2041

10,161

(This is excluding the slum areas.)

4.7 Urban Renewal

4.7.1 Central Town Areas

The Central Town has congested residential and commercial areas, which have high building density on land and high occupancy within buildings. These areas need immediate urban renewal. Refer to map.

4.7.2 Guidelines for urban renewal

The basic objective of the urban renewal plans are to upgrade the living and working environment by implementing schemes considering the existing physical and socio-economic conditions of the area. The schemes for the urban renewal are to be prepared after a comprehensive study, which should be in the form of a project report and a number of maps and plans. The following sets of plans are considered to be essential to project the existing conditions -

- a) Land Use
- b) Physical condition of structures
- c) Facilities and services
- d) Circulation pattern
- e) Open spaces, park and playgrounds
- f) Special feature (if any)
- g) The plan proposals for the urban renewal should indicate:
- h) clearance areas and areas to be acquired (This would include subsequent plans for redevelopment of these pockets),
- i) population distribution (in relation to holding capacity),
- j) proposed land use,
- k) proposed circulation system (indicating widening of streets, pedestrian streets, parking areas, access of emergency vehicles),
- l) up gradation of facilities and services,
- m) the existing Public and Semi-public uses and services like hospitals, dispensaries, colleges, schools, police stations, fire stations, post offices, local government offices, parking etc. to be retained in their present locations and also additional sites required to be indicated in the Urban Renewal Scheme; and
- n) Recreational areas (indicating totlots, parks, play grounds and other recreational facilities).

Note: Reduced space norms may be adopted for community facilities/ social infrastructure. The concept of Accommodation Reservation i.e. allowing construction of community facilities without counting in FAR may also be applied

The Urban Renewal Plans would be prepared within the framework of the land use of the area as indicated the land use plan. In case of residential areas, the possibilities of mixed use (on ground floor) and street commercial may be explored. Special characteristics and features of the area would be kept in view. As far as possible, the urban renewal project should be self-financing.

5 CHAPTER : Transportation

The Concern

Transportation network of an area plays an important role in the area's economic and socio- cultural life. A well laid out road network can provide answer to many problems of human settlement. The growing demand of circulation space calls for scientific assessment of the problems of movement such as circulation pattern, road capacities, inaccessibility , lack of parking space etc, so that remedial measures could be evolved both for short as well as long terms measures.

Passenger and goods transport movement as well as their related concerns in the city transport sector play a critical role enabling productivity of the city system and promoting the welfare of the city and its region. The present transportation exercise is to evolve a transport system best suited to the unique dimensions of the town and to support the social and economic activities taking place there in.

The required traffic surveys and studies have been carried out to appreciate the traffic and travel characteristics, for identifying issues, constraints and potentials and to work out the most appropriate transport system for the town.

5.1 Network Of Roads and Traffic Characteristic



5.2 Road Network:

The road network of the town is fairly planned and futuristic but needs maintenance. N.H. 31 passes through the southern part of Barpeta Road Master Plan Area. PWD road to Manas national park passes through Barpeta Road. Unlike many other towns of the state the roads in Barpeta Road are adequately wide and network is like iron grid. Shri Durgeswar Sarma, Sub-Divisional Officer (civil) of Barpeta Road in the early fifties is credited with the planning and vision for Barpeta Road. The Roads in and around the market areas need to be improved but they have scope due to their width. Roads in residential areas are

fairly good and barring a select few, which need improvement Barpeta Roads present network is serving the people well. The problem with the town is its rapidly growing commercial activity, which has seen a mounting pressure on its roads and habitable space and although the town has stood well against this a master plan needs to be prepared immediately for control and order in future. The vegetable market

area, which witness hectic activity during season with minimum 20 trucks and other smaller vehicles moving in and out needs improvement. Records available with the Municipal Board are illustrated in the following table.

Road Type	Length (KM)	Percentage
Bituminous	30.0	59.4%
Gravel	15.5	30.7
Earthen	5.0	9.9%
Total	50.5	100.0%

Only 22% of the road length had a carriageway of 7.0 m (2 lanes) and above; 82% of road length did not have footpaths; 40% of the road length did not have drainage facility; nearly 60% of the road length did not have street lighting facility.

Household survey conducted by T&CP, District Office, Barpeta in 2013 indicates the status of vehicle ownership of households in the Planning area.

Status of Vehicular Ownership in Barpeta road Master Plan Area

Sl. No.	Type of Vehicle	% of households
1	Cycle	41
2	Motor cycle / Scooter	27
3	Car	9
4	Nil	23

Model share of trips generated from the planning area is as follows:

Walk	Cycle	Two Wheelers	Light commercial Vehicles	Taxi	Bus	Others (inclusive of own vehicles)	Total
11 %	13 %	21%	24%	3%	21%	7%	100%

5.3 City Road Network

The BRMP-2041 recommends development of a hierarchy based arterial road network system comprising primary arterial, sub-arterial and collector roads. The main functional roads recommended are:

- a) City Radials/Axials
- b) Alternative Corridors

c) All Purpose Roads in Central Area

No specific road network has been designed as the condition of the present roads need to be taken care of and after a period of five years a fresh plan will be taken up for this alternative network to improve the transportation system.

Only a few stretches which need to be connected has been proposed primarily in this plan. Refer mapThe existing roads

5.4 The Existing Roads

The existing roads are proposed to be upgraded in terms of ROW, capacity and other geometrics. The new roads need to be planned and designed for a higher level of service from their entry into BRMP to their meeting with the CBD orbital Road. Within the core area the roads will lose their characteristics and are to be developed as all-purpose roads. The primary arterial roads have a ROW varying between 15 to 30 m. In addition the city level roads comprise sub-arterial roads (10.5 - 18 m R/W), and collector roads (7.5-10 m R/W).

5.5 Bus Transport Terminals

1 sub-nodal terminal need to be proposed at the NH-31 and town intersection, where all the modes of transport can be organized for a smooth flow into the town areas. The proposal needs to be carried out with the consent of the authorities and a feasibility study to further facilitate it. The sub nodal terminal may be proposed to be developed as multi-use complex, under PPP route.

5.6 Local Area Mini Terminals

Every local area (city municipal ward/ new housing development area), as part of Local Area Plans (LAPs) to provide for mini terminal facilities for bus /alternative services serving the area. These terminal facilities could be incorporated as part of the commercial/facilities complex of the Local Area. Hence no separate allocation and reservation of land is made for these terminals. Care to be taken to provide for easy access and exit provisions, convenient bays for them and shelters for the passengers. Such terminals can be provided in the proposed neighbourhood centres

5.7 Pedestrian Facilities

Walking is a predominant mode in the town. The transport system plan promotes and facilitates walking. The main strategies and measures proposed as part of the plan are as under:

Provision of sidewalks on primary arterials, sub-arterials and collectors on both sides of the road and on at least one side on local roads

Cross pedestrian facilities to be provided as per the warrants recommended by Indian Roads Congress.

Sidewalks on all the major roads to be designed for level of service "C"

Improvement measures in terms of pedestrian controlled facilities at intersections , grade separators and widening of sidewalls in the Central Areas and belong major corridors .

5.8 PARKING

5.8.1 Parking Policy – Need and Dimensions

Parking policies have become an integral part of modern urban planning strategies as transportation planner and engineers have recognised the substantial impact they may have on mode choice and travel routes , directly effecting urban mobility characteristics.

Every vehicle trip ends in a demand for parking of the vehicle at its trip ends. The parking of vehicles needs extensive and exclusive land area. Otherwise parking would spill over to other use areas like road carriageway and footpaths, open spaces. In turn they affect safety and environmental quality.

The escalating demand and varied needs of parking in Barpeta Road can only be met and organized in the framework of a comprehensive Parking Policy. Parking policy needs to move from ‘non-restrictive’ to ‘restrictive’ policy. ‘Restrictive’ policy would include from banning of parking to restricted provision, regulation and pricing of parking spaces.

strategies for managing and controlling parking in Barpeta Road as follows-----

1. Provision for the short range transportation needs of the urban area by making efficient use of existing transportation resources and provision for the movement of people in an efficient manner.
2. Elimination of on street parking , specially during peak period .
3. Provision of fringe and transportation corridor parking to facilitate transfer to transit and other high occupancy vehicle .
4. Strict enforcement of parking restriction .

5.9 Traffic Congestion And Parking Issues

Traffic congestion and road accidents are two external costs of transport and the reduction of their impact is often one of the primary objectives for transport policy makers . As traffic volumes and congestion grows on highways and urban road ways , freight and delivery service operators become increasingly challenged to maintain dependable and reliable schedules .

Traffic Congestion is a condition in transport that is characterised by slower speeds longer trip times and increased vehicular queuing . Traffic Congestion on urban road networks has increased substantially increased travel time caused by traffic congestion imposes costs to road users , both in terms of economics loss and also the reduced quality of vehicle and mobility . This increased traffic congestion may lead to more accidents due to increased traffic volume.

To reduce Traffic Congestion ---

1. Optimise traffic - light management .

2. Use C.C T.V. to monitor road condition .
3. Enforce existing road traffic laws .
4. Improve preception of buses.
5. Extend residents' parking zone .
6. Change for workplace parking.
7. Improve cycling infrastructure .
8. Improve bus service .
9. Develop and refine park- and - ride .
10. Road parking.

5.10 Traffic Generating Nodes.

Major traffic generating nodes are very few within the planning area.

1. Amtola ---- It is the main transportation and commercial hub of the planning area , as the area passes through N. H. 31. The area consist of many commercial establishments , wholesale shops and act as a transfer point of passengers and goods . A lots of other urban functionaries are located in the extend portion of this area.
2. Barpeta Road Railway Station ----- It is loading and unloading point , origin destination of heavy vehicle.
3. Barpeta Road Bus Stop Area.-----It is the main commercial and administrative hub of the planning area. It is major transfer point of passenger and goods .

5.11 IMPROVEMENT OF ROTARY AND JUNCTION

5.8.1 Improvement of Intersections

The transport system plan includes improvement of intersection geometrics including provision of channelisers, acceleration/deceleration lanes, traffic signs, lighting etc and provision of appropriate traffic control systems. It is recommended that all the major intersections, especially those on the arterial and sub-arterials be signalised and in the next level of improvement be linked and integrated and brought under a central Area Traffic Control scheme (ATCs). Grade Separators/Flyovers may be built based on traffic intensity, site conditions and environmental acceptability.

5.12 STREET LIGHTING AND PROPOSED IMPROVEMENT PLAN

The basic idea of Street Lighting is to provide uniform level of illumination on road at horizontal and vertical level and provide a safe and comfortable environment for night time.

Lighting design is basic idea of the selection and the location of lighting equipment to provide improved visibility and increased safety.

Street lighting systems should be designed in a way to avoid significant differences in illumination levels at the light source and on the road areas.

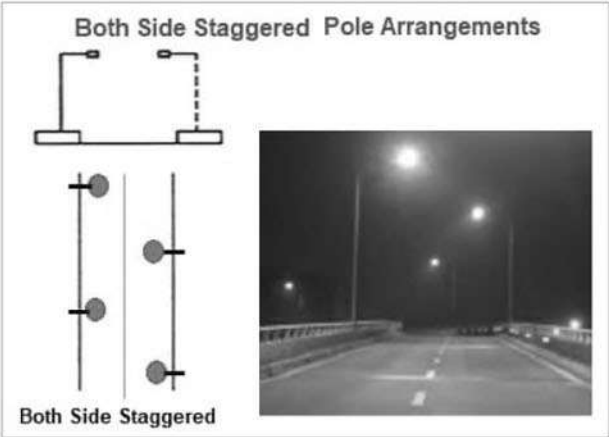
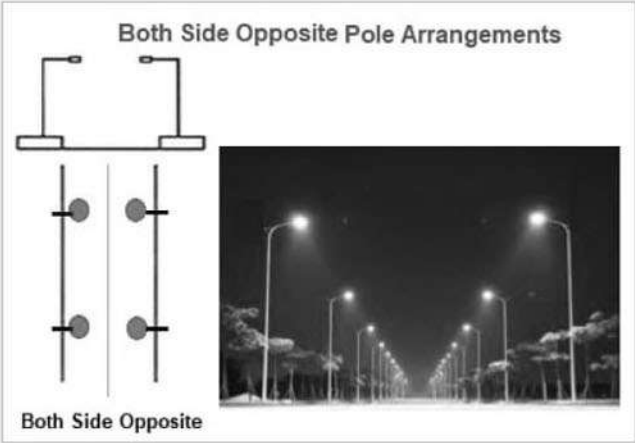
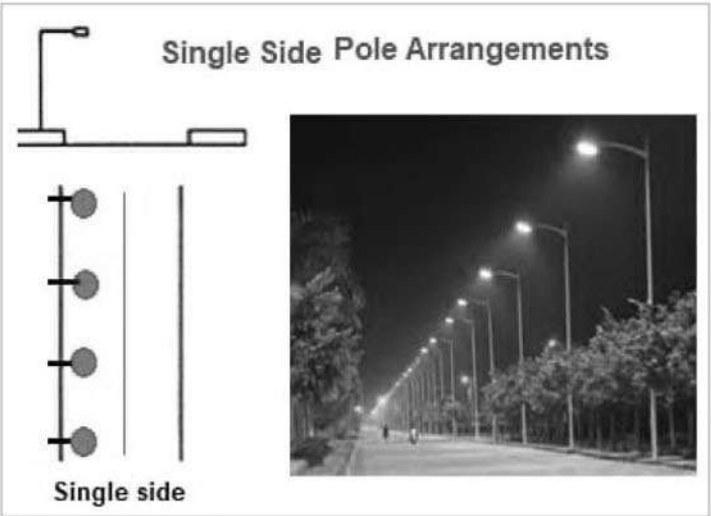
Road lighting provides visual conditions for safe , quick and comfortable movement in the roads.

Specification of effective street lighting

1. High lamp efficiency
2. Cost effectiveness.
3. Good colour rendering.

Street light arrangement

1. Arrangement - In one side pole layout all luminaries are located on one side of the road.
2. Bothside Staggered pole layout -- Alternately on each side of the road .
3. Both side opposite pole layout--Luminaries are located on both side of the road one after another.
4. Twin -central pole layout-- Luminaries are mounted on a T-shaped in the middle of the centre island of the road.
5. Pole Height-- The Installation height of the lamp be equal to or less than the effective width of the road.



5.13 SIGNAGE - AVAILABILITY AND REQUIREMENT

Understanding each and every traffic sign is among the most important aspect for all road user . It is important for all to know about the traffic signs of the road safety signs in order to ensure the safety of himself as well as others. The basic functions of signages include --

1. Inform road users of the distance left to cover to reach a destination .
2. Inform road users of the alternative routes to destination .
3. Caution road users of hazards near areas such as school and colleges
4. Inform road users of specific locations as parking and non parking .

For Barpeta Road Master plan area following points are required regarding availability of signages.

All on-street parking spaces need to be clearly defined by lane markings.

Adequate and appropriate signage's to be installed at all places on the street network to identify 'parking' and 'no parking' areas.

Off-street parking places to be clearly identified by signs and distinguishing marks.

5.14 Major Proposal .

Planning for Goods Movement

Planning for goods movement in an urban area includes three components. They are:

Planning for goods generating activities like wholesale markets, major industries, warehousing and storage areas, etc.

Planning for movement of goods modes and

Planning for parking and servicing of goods vehicles

5.15 Proposed Road Network

No such road network has been proposed at this time. Only betterment has been recommended at this time. Black topping and a minimum of 7.5 meter ROW need to be maintained at all levels while preparing the Local area plan. By preparing LAP, macro level details will be met up , rather taking the entire town pattern at the outset.

6 CHAPTER 6 . Physical Infrastructure, Public Utilities & Services .

6.1 Water supply

6.1.1 Present Water Supply Status

Main source of water is ring well and tube well. Assam Urban Water Supply and Sewerage Board also provides drinking water in the town but due to technical problems supply is not very steady. 7 out of 10 wards have been connected for water supply and the supply for the remaining wards is planned within the next few years.

Presently only 30% of the Barpeta Road town area is covered under piped water supply. The total installed capacity of potable water generation under BRMB area is around 80 MLD considering the capacities of the treatment plants at Panbazar, Patpabhri and Hengrabari although the total water produced is 59 MLD. The present requirement of water (@ 135 lpcd) for the .67 lakh population would be 9.05 MLD.

As per house hold survey conducted by T&CP District Office ,Barpeta in 2013, different sources of water supply in the planning area is given as in Table below.

Water Supply Sources in Barpeta Road Master Plan area:

Sl.No.	Source of drinking water	Total households	No. of households served	P.C of households served
1	Piped water supply	5930	4744	80%
2	Tube well	2179	1743	80%
3	Well	663	400	60%
4	Others (like pond etc.)	Nil	Nil	Nil

Source: Socio Economic survey, T&CP, Dist Office, Barpeta road-2010

It is observed that only ...80.....% of total population of the master plan is served by piped water supply. Most of the population is dependent on tube wells, wells etc. as their sources of water supply. Barpeta .

Water Supply Distribution in Barpeta Road Master Plan area

Sl.no./Area	Distribution Zone	Existing Capacity	Distribution per day MLD	Coverage Area /Distance	Duration of Distribution
1.Uttar Athiabari	Uttar Athiabari PWSS	0.202	0.1616	6070 m	8 Years
2.Kalahbhanga	Spot source (DAHP)	0.16	0.128	1000 m	7 Years
3.Manipur	Manipur PWSS	0.11	0.088	9490 m	5 Years
4.Nichuka	Nichuka PWSS	0.155	0.100	9294 m	28 Years
5. Balabhitha	Balabhitha PWSS	0.143	0.1144	2300 m	25 Years
6.Khairabari	Khairabari PWSS	0.29	0.232	1600 m	30 Years
7.Chengulia	Spot source (DAHP)	0.08	0.06	1000 m	20 Years
8.Satbainirtup	.Satbainirtup PWSS	0.108	0.0864	5997 m	6 Years

Source: Ex. Eng. (PHE) ,Barpeta Division.

Total --.09764 MLD

6.2 Drainage System

6.2.1 Existing Drainage System

The existing drainage network of Barpeta Road town is mostly earthen in nature and is in need of improvement. Main market area and some residential areas have RCC drains but due to lack of the total network these drains get clogged due to blockage in the earthen drains. The town does not have a sewerage system and most of the treatment is through septic tank. Effluent from the septic tanks is directly discharged in to roadside drains.

6.3 Sanitation.

Sanitation system aim to protect human health by providing a clean environment that will stop the transmission of disease . A sanitation system includes the capture, storage , transport, treatment and disposal or reuse of human excreta and waste water. It also maintain hygienic conditions through services such as garbage collection, industrial /hazardous treatment and disposal.

Status of sanitation in Barpeta Road Master Plan area

Sl. No.	Type	Total Household	No. of Household Covered	P.C.of Household
1	Sanitary Latrine (IHHL)	8772	4481	51%
2	Service	-	-	-
3	Pit	-	-	-
4	Others	-	-	-

Source: Ex. Eng. (PHE) ,Barpeta Division.

6.4 Sewerage System

Modern sewerage system falls under two categories. Domestic and Industrial sewers and storm sewers .Sometimes a combine system provides only one network of pipes , mains and outfall sewers for all types of sewage and runoff . The preferred system , however provides are network of sewers for domestic and industrial waste , which is generally treated before discharge , and a separate network for storm runoff , which may be diverted to temporary detention basins or piped directly to a point of river.

6.4.1 Existing Sewerage System

Presently the BRMB does not have any integrated sewerage system There are generally septic tanks in the municipal boundary. The effluent is released untreated into the nearby drains and low-lying areas. Similar is the case of industrial wastewater. In case of septic tanks, the soak pits are becoming non-functional in many areas because of high sub-soil water table within a short span of time.

6.4.2 Recommendations:

Proper schemes should be brought forward by the authorities to improve the situation and system of drainage and sewerage in the BRMP area

The encroachments on existing natural drainage system, which is the main reason for the blockage, should be stopped.

Existing manholes of drain are inadequate; more manholes and inlet are required for the quick disposal of silt and stagnated water. The size of the inlet holes and their position need to be redesigned.

Silt pit of proper size should be constructed in suitable areas and provision of periodical cleaning the silt pit should be done to avoid blockage in the drainage system.

Effective garbage collection system (including domestic and other type of garbage) to be in place so that this does not block the drainage channels.

6.5 Solid Waste Management

Presently important sources of solid waste generation are (i) Residential areas including slum habitations (ii) Fruit and vegetable market (iii) Hotels and restaurants (iv) Hospitals (v) Drains de-silting (vi) Commercial & Industrial wastes from these areas.

It is therefore recommended that the municipal authority looks for proper landfill sites and then in collaboration with the town and country planning deptt, a suitable sustainable plan is further prepared to serve the present and the future needs of the area.

Recommendations:

1. Solid waste open burning .
2. Solid waste sanitary land fills
3. Incineration method.
4. Composting process .
5. Disposal by ploughing into the field .
6. Disposal by hog feeding .



6.6 ELECTRICITY

Electricity: Assam State Electricity Board provides electrical supply for the town. The Total number of urban consumers in the town are 14,782 out of which 2,539 no. are commercial, 177 no. are industrial , 40 no are Government, 51 no. are public lighting, 446 no. are general and remaining 11,531 are domestic. There are 546 numbers of fluorescent tube street lights and 20 numbers of mercury street lights in the town covering all the wards. Energy consumed per month 578.082 MU.(as per February, 2021)

Status of Conjumption of electricity in Barpeta Road Municipal area

Sl. No.	Category	No. of consumers	Energy consumed
1	Domestic A(below 5 kw)	11,266	7,20,100 Units
2	Domestic B(Above/Equal to 5 kw)	265	97,957 Units
3	Commercial	2,539	2 82,029 Units
4	Industrial	177	1,62,515 Units
5	General (others)	252	55,840 Units
6	General (Educational)	194	6464 Units
7	Government	40	11,633 Units
8.	Public Utility	51	21,582 Units

Source- APDCL ,Barpeta Road

6.7 Social Infrastructure**6.7.1 Education**

The Education in the State is classified in the following categories:

Table 7.1: System of Education in the State

Elementary Education	Age 6-14 years	Classes I-VIII
Primary		
Upper Primary		
Secondary Education	Age 14-16 years	Classes IX-X
Higher Secondary	Age 17-18 years	Classes XI-XII
Higher Education		
University		
Institutes of National Importance		
Degree Colleges		
Technical and Vocational Education		
Vocational Institutes		

Source: Economic Survey of Assam 2003-04.

There are a few educational schools and colleges like St Joseph's High School, Kanailal Vidyapeeth School, Assam Brilliant Academy (Jyoti Nagar), St. Mary's High School, Manas Valley Academy(CBSE), Marian School, Shree Hindi High School, Gopinath Bordoloi High School, Dr-K.K.das girls high school, Sajanikanta Higher Secondary School, Dronacharya Academy (private college), Basanta Mondal High School (Simlaguri), Brahmaputra Academy (Simlaguri), Modern Academy (Simlaguri), Shankardev Sishu Niketan, G.L.C.College, NEWAS Academy under KKHSOU (Simlaguri) Ramdhenu College (Simlaguri) and the famous BH college. There is also another school which is become very popular nowadays and that one is Gour Mohan Kuch Roy Memorial High School (G.M.K.R.M.H.School) which is situated near Jakhlibil Pathar,Bengukuch Road. A few km from Barpeta Road Jawahar Navodaya Vidyalaya a central government school is situated

Apart from these educational Institutions the Barpeta Road Howly College (BH College) is a degree level college for science, arts and commerce streams and it is a reputed institute of the region.

Ganesh Lal Choudhury College is an arts college in the town. There are Two numbers of higher Secondary School, Twelve numbers of high School and Eighteen Numbers of ME/ Primary Level School.

6.7.2 Health

There is one Public health center and a privately operated maternity hospital besides two others private nursing homes.

6.7.3 Norms for Health facilities

The Norms and Standards for provision of Health Infrastructure in urban areas adopted for BRMP-2034 are given in Table. This is worked out to provide for 5 beds per 1,000 populations and also to result in a balanced distribution of health facilities throughout the city.

Table :Planning Norms and Standards for future provision of Health Infrastructure

Sl. No.	Category	Population Served	Hierarchy	Planning Norms and Standards	
				Population /Unit	Plot Area
1	General Referral Hospital (500 beds)	5 Lakh	District	1 for 2.5 lakh	6.0 ha
2	Intermediate Hospital A (200 beds)	1.0 lakh	Community	1.0 lakh	3.7 ha
3	Intermediate Hospital B (80 beds)	1.0 lakh	Community	1.0 lakh	1.0 ha
4	Nursing Homes, Child Welfare, Maternity Centre, Polyclinics	1.0 lakh	Community	0.45 lakh to 1 lakh	0.2 to 0.3 ha
5	Dispensary	0.15 lakh	Neighbourhood	0.15 lakh	0.08 to 0.12 ha
6	Medical College		City Level	Total City	15.0 ha
7	Speciality Hospital – City Level		City Level	Total City	8.0 ha

Source : Master plan Guwahati, GMDA

6.8 Recreation and Sports

Although Barpeta Road town has a few hectares of eco-sensitive area like the some farm lands and open grounds, but a very few developed parks and playgrounds are available. Based on existing land use survey, presently only 1 ha area is under developed parks and playgrounds.

Hence civic bodes need to identify and create and also develop the open spaces into organized spaces like parks and playgrounds. The main drawback for not being able to locate a specific area is for all being private lands. So if the space cannot be acquired for the purpose for some reasons , this way keeps flexibility.

Moreover one community centre and neighbourhood play areas needs to be develop after consultaion with the residents.

There is One Cinema Hall of 370 Sitting Capacity. But seeing the growing demand of movie lovers, a state of the art cinema hall needs to be thought for.

6.9 Police

Presently, there is 1 Police Stations and no Police Outposts in BRMP. The one existing jail, is about 25 kms from the town at the district headquartering.

Provision of police out posts needs to be incorporated at each of the villages added under the main police station for a regulated and crime free area.

6.10 Fire

Fire Services are needed for protecting people from fire hazards, building collapses, and other unforeseen emergencies. At present, there is 1 Fire Stations in BRMB area including.

Now that the planning area has increased a need for further 2 fire sub-station within the planning area needs to be accommodated.

6.11 Postal Services

The town has a 1 post office. Few Courier services has come up recently in the town and trending at a large pace.

Hence the BRMP recommends Post Office Counter without delivery (At Local Shopping Centre) for a population of 10,000 to 15,000 on an area of 60 sq.m~ 85 sq.m.

6.12 Telecommunication

Barpeta Road has one Telephone Exchange, with 4500 user capacity and present connection is 3150 numbers.

6.13 Distributive facilities

Distributive Facilities include Milk Distribution, LPG Storage and Distribution and Petrol Pumps.

Norms and Standards and Provision

Planning Norms for Milk distribution and LPG storage are given in Table

Table: Planning Norms and Standards for Distributive Facilities

S.No.	Category	Planning Norms and Standards
1.	Milk Booth/Milk and Fruit and Vegetable Booth	One per 5,000 population (in residential developments)
2.	LPG Godown including Booking Office.	3 LPG Godowns per 1 lakh population in facility centres.

6.14 Cremation and Burial Grounds

At present there is 2 cremation grounds in municipal area namely Kalahbhanga Crematorium and Marowari Crematorium .There is 1 Burial grounds also.

7 CHAPTER : ENVIRONMENT AND CITY BEAUTIFICATION PLAN

7.1 Description .

Environmental and City beautification Plan is a fundamental purpose of urban design at this time .In recent years , cities shows increasing sign of environmental problems due to the negative impacts of urban activities .The degradation and depletion of natural resources , climate change pressure on green areas have become major concern for cities. An extremely important function of an urban ecosystem is to provide healthy and sustainable environments for both natural system and communities .

For Barpeta Road Master Plan Area , Environment and City beautification could be describe as a process of making visual improvements in the planning area .This is often involves painting trees , shrubbery and other greenery . It may involve decorative or historic main street development. Beautification is a key aspect of community development and it can be an easy way to bring people together .The most important factors for making human life more pleasant are "creating peace , beautifying the spaces , reducing the pollution and regulating the urban graphics and visual arts, besides protecting the society against psychological harms. It is important for people's good health that community they live in is not only clean and free from rubbish , but that is a comfortable and pleasant place in the other way.

There are a few water bodies around Barpeta Road Master Plan Area like Mora Manas , Brpeta road public pond etc. Manas National Park and satras are located at a few distances from Barpeta Road Maser Plan Areas .

7.2. Plan/Measures For Protection And Conservation Of Environmentally - friendly Zone

The concept of eco- sensitive zone is an initiative by Government of India to advocate sustainable development apace with the conservation of natural heritage . The Ministry of Environment and Forests has come out to spawn Eco - sensitive Zones around these protected areas. Environmental protection is the practice of protecting the natural environment by individuals, organizations , and Government .Its objectives are to Conserve natural environment and where possible, to repair damage and reserve trend.

Key Point For Protection And Conservation Of The Environmentally- Friendly Zone Of Brmpa.

1. Reduce , reuse and recycle .
2. volunteer for clean-up in own community.
3. Educating people.
4. Choosing sustainable.
5. Planting Trees.
6. Safeguarding biodiversity.

7. Maintaining ecosystem balance.

8. Maintaining water quality .

9. Conserving natural resources .

7.2.1. Heritage Conservation and Tourism

7.2 Heritage Conservation

Barpeta Road and its surrounding area are rich in cultural and historical heritage. There are a number of important archaeological and architectural sites of historical importance. Strategy for Conservation Built heritage of these places needs to be protected, and nurtured and passed on to the coming generations. For this purpose, a conservation committee (CC) may be established by the administration. The CC shall prepare a list of Heritage sites/buildings based on the following criteria:

- a) The age of the building;
- b) Its special value for architectural or cultural reasons or historical periods
- c) Its relevance to history
- d) Its association with a well-known character or event
- e) Its value as part of a group of buildings
- f) The uniqueness of the building or any object or structures fixed to the building or forming part of the land and comprised within the cartilage of the building. Also refer Section 13.5.

7.3 Tourism

Major Tourist Attractions in and around Barpeta Road is the Manas National Park and the Satras located at various locations within the district.

Hence the Assam Tourism should aim to position tourism as an engine of economic growth and to harness its multiplier effects for employment generation and economic development around the planning area.

For this to happen infrastructure at local level needs to be improved , as this head in interlinked with the other provisions of the master plan All infrastructure connected with tourism such as good roads, hotels and safari resorts, and information support services needs to be developed.

Basic amenities like clean public toilets, easily accessible telecommunication services, tourist information centres, banks and currency exchange centres, food courts and restraints, hotels and lodges etc. among other services to be provided.

Quality Hotels, recreation and shopping centres, local transportation, taxi services etc.

Development and maintenance of the tourist destinations.

Developing the handicraft and handloom haats.

7.4 Environmental Planning .

Working out ahead of time where schools, playing fields ,houses , shops and other building and facilities will be build in city or town is called environmental planning. A good planning proposal for Barpeta Road Master Plan Area may be provide for ----

1. Areas such as roadside reserves , playgrounds , gardens and parks which can be made more attractive by planting trees shrubs and grass .
2. Plenty of good places to play and exercise .
3. Shady places in which to sit and talk .
4. Shops , public toilets , health centres and other important facilities which are easy to reach .
5. Roads , footpaths and street lighting which allow people to get around the community easily and safely .
6. Water and power supplies to every house and public safely .
7. Sewage and rubbish disposal systems which will meet the community's requirements .

BENIFITS OF ENVIRONMENTAL PLANNING

- O. A clean and healthy environment .
- O. A nice , pleasant place where to live healthier people .
- O. Plenty of places to play and exercise .

7.5 CITY BEAUTIFICATION PLAN/PROPOSAL .

7.5.1 Road Side Plantation .

Under severe climatic conditions, selected roadside trees can form wind breaks and shelter belt to protect crops, and help to reduce climatic excesses and soil erosion . They can restore some ecological diversity to areas of agricultural monotony.

For BRMP area The spacing and arrangements of the trees should be such that they do not create any obstruction in the movement of traffic. The general rules and or guideline for spacing and location of trees are as follows.

- 1.The spacing between two trees in a row along the road should be within 9m to 12m.

2. The trees should be planted at least 12 m apart from the centre of the carriageway.
3. In the case of water logged area , the trees should be planted on sufficient high ground.
4. Trees are planted both side of the road .
5. The trees should be planted in such a way that gives better shade on the carriageway through the year .That's why staggered way is most preferable for the planting of trees on road side.

7.5.2 Urban Agriculture And Urban Forestry.

Growing the Urban forest , a stated goal of many municipalities often occurs through programs targeting the planting and protection of trees on private residential property . At the same time , backward agriculture is gaining in popularity with the support of municipalities , NGOs etc , while an extensive tree canopy has numerous ecological , social and economic benefits , it also has the potential to shade out other forms of vegetation .

These project will explore the tensions between Urban forest and backward agriculture in Bapeta Road Master Plan Areas by -----

1. Focusing on tree and food crops .
2. Mapping yard- level location of trees and other agricultural product and linking these datas to large scale patterns using high resolution imagery.

7.5.3 URABAN AGRICULTURE

Urban agriculture can contribute to minimizing the effect of climate change by , at the same time, improving quality of life in Urban areas .In order to do so most effectively land use and special planning are crucial, so as to obtain and maintain a supportive green infrastructure .

For, the scope of urban agriculture , thereby is to establish food production sites within the Bapeta Road Master Plan Area as follows ----

- O. Indoor agriculture .
- O. Vertical farming .
- O. Rooftop production .
- O. Edible walls.
- O. Edible landscape.
- O. School garden.
- O. Community gardens.

7.5.4 URBAN FORESTRY

Urban forest have several environmental benefits . Trees reduces air pollution . Urban forestry provides the most effective air pollution measure for any city .It is the care and management of single trees and tree population in urban setting for the purpose of urban environment .The concept of urban forestry, which advocates the role of trees as a critical part of urban structure , was developed to addresses the issue of impact on forestry by urbanization . Aside from the beautification of the urban environment , they offer physiological , sociological and economic benefits towards society.

For Barpeta Road urban area , urban forestry comprises all green elements , such as ---

- o. Street trees and road plantation .
- o. Public green areas , such as parks , gardens etc.
- o. Semi private space , such as green space in residential areas and industrial parks.
- o. Natural forests under urban influence , such as natural reserves etc.

Five steps to meet the goals and facilitate a successful urban forestry process-

1. Form a team .
2. Analyze the current condition .
3. Engage the community .
4. Create the plan .
5. Implementation.

7.5.5 Public Rain Water Harvesting Scheme .

Rain Water Harvesting can be defined as activity of direct collection of rain water and storage of rain water as well as other activities aimed at harvesting and conserving surface water and ground water, prevention of loss aiming at most efficient utilization of the rain water towards best use for the humanity .

The Environmental Benefits Of Rain Water Harvesting Scheme.

- > Rain Water Harvesting can reduce storm water runoff from a property .
- > By reducing storm water runoff , rain water harvesting can reduce a storm's peak flow volume and velocity in local creeks , streams and rivers , thereby reducing the potential for streambank erosion.
- > It is an alternative supply during water restrictions .

7.5.6 SURFACE RUNOFF HARVESTING

In urban areas , rain water flows away as surface runoff . This runoff can be caught and used for recharging aquifers by adopting appropriate methods.

7.5.7 ROOFTOP RAIN WATER HARVESTING

It is a system of catching rainwater where it falls. It can either be stored in a tank or diverted to an artificial recharge system .This method is less expensive and very useful ,if implemented correctly , helps in augmenting the ground water level of the area.

7.5.8 RAIN WATER HARVESTING SCHEME FOR BARPETA ROAD MASTER PLAN AREA.

There are no any public rain water harvesting scheme for Barpeta Road Master Plan Area. The rain water harvesting and conservation technique may be successfully execute at the area , as many of the area get effected during rainy season. The main objectives of the schemes are as follows.

1. Augment the ground water recharge through surplus water available in the area.
2. To arrest the rate of decline of ground water level .
3. To monitor the rate of decline of ground water levels .
4. To develop the technology for artificial recharge, specially in Barpeta Urban area and also quantify the volume of recharged water .
5. To create awareness in the society for proper management of ground water resources .

For public rain water harvesting scheme , salient feature of artificial recharge to ground are as under.

1. Average annual rainfall to calculate.
2. Total area to be taken .
3. Depth of water level to calculate .
4. Water availability for recharge .
5. Expected recharge .

7.5.9 Development Of Parks And Recreational Spaces.

Existing parks and recreational places of Barpeta road master plan area.-----

1. Mohanlal Choudhury Memorial Park.
2. Children Park .
3. Bishnujyoti Sarovar.
4. Rabindra Nath Tagor Statue



Bishnujyoti Sarovar.

Barpeta Road Municipal Corporation operates 6 no of recreational spaces . These facilities are used to provide recreational service to residents in all part of Municipal Area . Many programs are targeted toward specific age groups , such as seniors and teens.

Preserve and enhance parks and recreational spaces within the Barpeta Road Master Plan Area , to meet active and passive recreational needs , improve environmental quality , enhance the identity and character of district neighbourhoods and provide visual beauty.

The policy may be taken on how existing gaps might be closed and how new facilities can be adopted to meet future needs like recreational and athletic facilities , including play field , tennis court , swimming pool , and other open areas for other sports activities .

Provide for the continuing maintenance , renovation , and upgrading of the parks and recreational facilities to prevent their deterioration and ensure that they continue to meet community needs .

Steps might be taken as follows --

1.RESIDENTIAL YARD.

Recognize the value of Residential yards as a component of city's open space system and discourage increased coverage of such areas .

2.COMMON OPEN SPACE IN NEW DEVELOPMENT.

Provide incentives for new and rehabilitated building to include green roof , landscaped open area and other common open space areas that provide visual relief and aesthetic balance .

3.TRAFIC AND RECREATIONAL PLANNING.

Various traffic congestion , it is observed around recreational facilities when major events are held , because of the concentration of private vehicles before and after the tournaments . Recreational facilities should be well served by public transportation.

7.5.10 Identification And Demarcation Of Multi- purpose Open Spaces For Sports, Cultural Functions , Fair , Circus etc .

Open space are the placement of major civic and public gathering , ceremonial spaces for recreation and leisure . These places are an expression of the public culture .

The purpose of identity and demarcation of multipurpose open space required by-----

- a/ Identify the current and future needs of Barpeta Road Master Plan Area .
- b/ Review and analyse the open space and indoor facilities .
- c/ Recommend local provision standards for all type of open spaces .

Open space can serve a number of functions within the urban fabric town . For example , the provision for play and informal recreation , a landscaping buffer within and between the built environment and a habitat for the promotion of Biodiversity can all provide valuable amenities for residents and visitors .

Each type of open space has various benefits , depending on its type such as allotment for individuals to grow their own produce , play areas for children, playing pitches for children etc . Open spaces can additionally perform a secondary function , such as cultural functions , circus , fairs in addition to facilitating sports and recreation.

Barpeta road mini stadium is one and only multipurpose open space within the Master Plan Area . Additionally there are a number of small open spaces in the Municipal area . A balance is needed between different type of open space in order to meet the full spectrum of local needs as follows -

1. Indoor sports facilities - All facilities should be built .
2. Provision for children and young people. - Within an equipped playground , there should be a range of at least five different type of well maintained pieces of equipment .
3. Outdoor sports facilities - Clean litter free sports facilities should be provided with appropriate , well drained , well maintained facilities .

The main purpose behind creating an open or public space is that people can gather here during trouble or any event . Also these should centrally locate , so people could access them from anywhere , plus they represent the city's history , culture and become iconic sites of cities .

NEW PUBLIC SPACES -

The growth of community - led project is creating public spaces that has a very local and specific uses related to local needs and physical qualities and feature of their local environment . The hosting of events on open spaces has become increasingly popular with local providers . The number of events on city's premier sites , mainly district or sports level events , Bihu function , Shree Krishna Rash festival , Book Fair , Trade fair on these open spaces , as well as ample opportunities for such events on some of the smaller local open spaces in the Municipal areas .

7.6 Beautification Of Major Transit Zones.

MAJOR JUNCTIONS

1. N.H. 31 junction is located at 1.5 K. M. away from main bus stop of Barpeta Road .It is a three leg intersection with arm leading towards Guwahati on east , Bongaigaon on west and Barpeta road town as well as Manas National park on north .It has lot of delay and queue length during office hours . The major objective of this study is to give an alternative and long term solution for the improvement of the present condition by concept of " congestion Free Corridor ".

OBJECTIVES ARE-

1. To provide higher level service .
2. To control speed limit .
3. To arrive with a best proposal to reduce traffic congestion , delay and queue length.
4. For other junctions like Amtola approach , Ramkrishna approach , Railway crossing approach , a beautification plan / proposal may be taken for signal free corridor.



EXISTING 3 LEG JUNCTION IN N.H. 31

7.7 BUS DEPOT.

For over hauling the Government Bus Stand , it will not only be rejuvenated as a hub for long distance and short distance buses but will also offer a slew of facilities to passengers . The existing bus stand, situated at the heart of Barpeta Road Town , does not meet the needs and facilities of passengers . The current station of bus depot is neither capable of fulfilling the needs of increasing uses nor clarity of functions / aesthetic qualities .

The purpose is to design a functional and social transportation complex in Barpeta Road , by using the potential of land and realize that its nature as a landmark. The terminus will feature a complex transit structure . It will be connected to the nearby Railway station . The structure will feature offices of transport companies , service centre of heavy vehicle manufacturers , shops offering goods and services to bus / truck drivers need and warehouses and godowns for transporters to unload goods and distribute those using smaller trucks . It will be occupied with WI-FI so that transport companies can keep on eye on their vehicles using GPS.



Existing Bus Stand

7.8 RAILWAY STATION

As Indian Railway has been working towards beautification of Railway station are being beautified with wall painting and beautiful murals .

Proposal can be made for plantation and parking of vehicles .Areas around Barpeta Road Railway station could be clean and beautified with colourful cultural and natural painting .Keeping modernity and traditionality in mind the team of local artist could bought to built structures depending local culture and festivals at Barpeta Road Railway Station .

7.9 MARKET ZONES.

- a) Car free zone with only pedestrian movement inside on central market area .
- b) Proper vending zone.
- c) Cleaning of market places .
- d) Removal of unauthorized road side kiosks.
- e) proper drainage .

7.10 Beautification Of Signage And Street Furniture.

7.10.1 SIGNAGE.

Signage system play a number of important role . They provide information and direction for people to find their way around a site , help to maintain the site's image and coherence and encourage learning.

Besides conventional signboards , maps , kiosks and other elements may be use as signs and placing signs at other site amenities like benches , cafes and intersections can help to create mini destinations in the open space.

7.10.2 STEPS

- a) Regulatory signs for traffic control.
- b) Warning signs for existing and potentially dangerous conditions for bridge , crossing etc.
- c) Information signs to inform visitors about the sites .
- d) Educational signs to get people interested in unique features of sites .
- e) 5.Clearly visible and directional sign should be visible from a distance of at least 20 meter for clear visibility.

8 CHAPTER :Land Use Plan

8.1 Developable and Non -developable area of the Master Plan .

Development plan: Present land area of Barpeta road Municipal Board is 425 Hectare. Department of T &CP, Assam has initiated the preparation of draft Master plan for Barpeta Road. The IDSMT schemes propose for improvement of the base infrastructure of the town and specifically improve the markets so as to further increase the revenue collection. IDSMT and other JNNURM scheme shall be part of the master plan in future and presently act as revenue augmentation and civic betterment scheme.

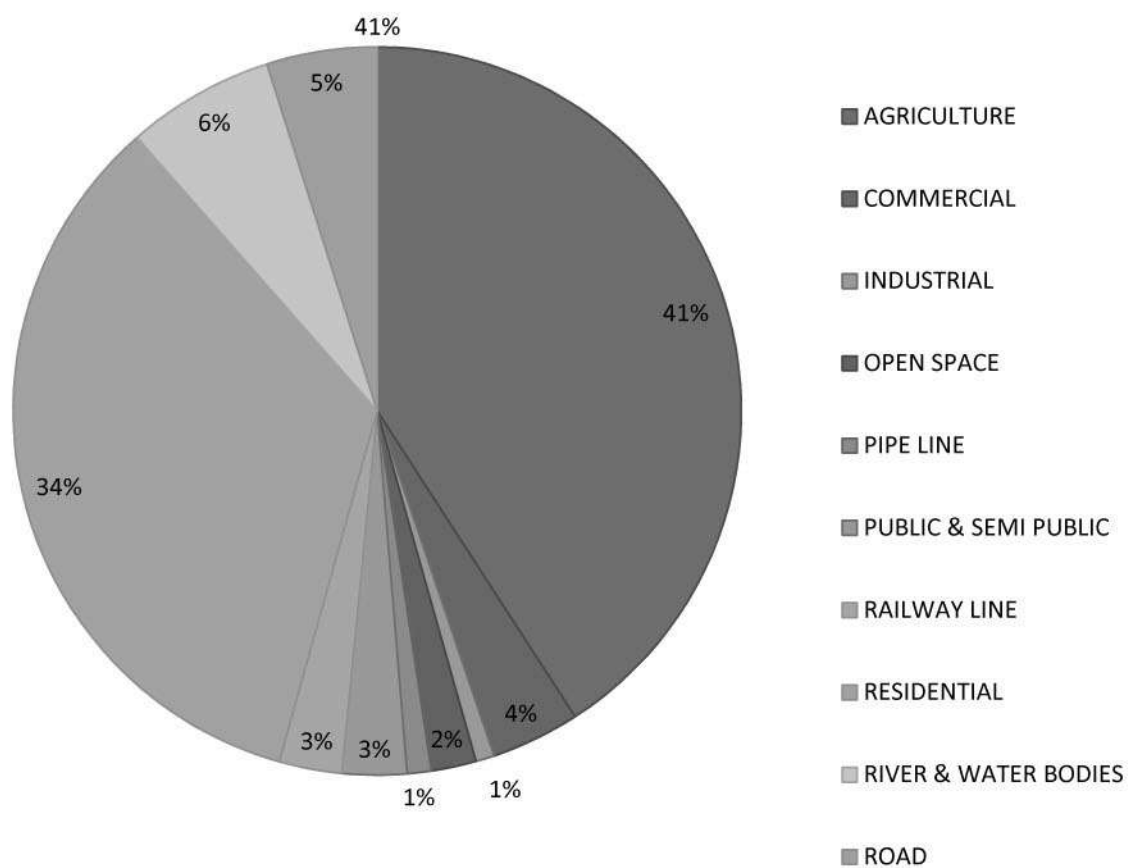
8.2 Existing Land Use of Barpeta Road Municipal Area

Activity	Area (Hectare)	Percentage
Residential	249.90	58.8%
Commercial	88.44	20.85%
Industrial	22.60	5.31%
Public	22.60	5.31%
Agricultural	11.30	2.64%
Low lying	12.56	2.95%
Open space	17.60	4.14%
Total	425.00	100%

8.3 BARPETA ROAD EXISTING LANDUSE

LEGEND	AREA (sq.m)	Percentage of land-use
Commercial	1017491.7	3.96
Industrial	216178.7	0.84
Pipe line	278523.7	1.08
Public & semi-public	739104.7	2.87
Residential	8808556.7	34.30

Road	1264503.7	4.92
Total Developed Area	12324359.2	47.97
Railway Land	719241.7	2.80
Agriculture	10422860.93	40.59
Open Space	512100.7	1.99
River & Water Bodies	1699539.7	6.61
Total Area	25,678,102.23	100

MASTER PLAN AREA: LANDUSE SHARE

Existing Master Plan Area Land Use Share

8.4 Land Use Analysis:

Quality of urban life and functional efficiency of a settlement is dependent upon proper disposition of activities, the inter relationship it offers between the work centres, living areas and recreational areas. In order to conduct a systematic analysis of the problems regarding disposition of various activities expressed as land use; a detailed land use analysis has been done in respect of the master plan area.

In order to understand the problems and prospects of various land uses, the land use of the planning area has been classified into 10 categories.

Status of Govt. land :

As per the records available from Circle Office, Sorbhog the total Govt. Land within Barpeta road Master Plan area is 2567.8 hectare. The detailed break up of Govt. land within the master plan area is given in Table .

TABLE : Status Of Govt Land Existing Land Classification Of Barpeta Road Master Plan Area

Sl. No.	Category of land	Area in hectares
1	Railway	113.42
2	Farm	5.06
3	National Highway	35.65
4	Pipeline	2.26
5	Irrigation	4.82
6	River	369.98
7	Embankment	26.85
8	Gorabat /AlibatRoad/Road/Arabat	187.04
9	Public/Semipublic (School/ college/Masjid)	54.22
10	Water bodies (bill, dong , jalatan , river etc)	.30
11	Burial Ground	1.03
12	Market Society	0.75
13	Ceiling	10.32
14	Govt. Vacant land.	59.50
Total		871.20 hectare

Source: Circle Office, Sorbhog

8.5 Future population and its characteristics :

An assessment of future population and its' future characteristics is the basic requirement for preparation of a development plan of a human settlement. However it is equally difficult proposition to

work out exact estimates of future population of a settlement, because of the factors, on which the growth depends, cannot be foreseen accurately.

While arriving at the projected figure the following factors were taken into account:

- i) Natural growth of population of the area.
- ii) Trend of migration of population from vast rural hinterland and expansion of saturation of adjoining Area.
- iii) Various development projects being taken up in the planning and its adjoining areas.
- iv) Availability of vacant land and existence physical barrier such as low, Marshy flood prone area.

8.6 PROPOSED LAND USE PLAN

Aim & Objectives:

The main aim and objectives which are attempted to be achieved in preparation of this master plan for Barpeta Road area for the plan period up to 2041 A.D. are as follows:-

To improve the existing conditions of the planning area and to develop an urban structure for a projected population of 2,17,620 by 2041 AD.

To integrate the various areas and their needs of the planning area with the adjoining area in a regional setting.

Functional distributions of work centres and living areas minimize travel distances and increase the efficiency of functioning of activities.

Assuring efficient transport network and circulation system with selected infrastructure for safe easy and speedy movement.

To increase the economic growth by increasing economic activities like industries, service sector and trade and commerce, with minimum disturbance to the natural environment.

The Land Use Plan – 2041 for BRMPA has been prepared considering:

The vision and goals as enunciated

Restructuring of land uses based on sectoral studies

Accommodating the existing developments as possible

The requirement of additional physical and social infrastructure

Plan concept:

The plan takes the neighborhood concept with a decentralized approach. The master plan is categorically visualized as sustaining planning units viz clusters, neighborhoods sectors and community as a whole in a hierarchical order. The entire master plan area is served by the community level centre at Barpeta Road , which in addition also have to play the role of regional centre. Smaller planning units are expected to be self sufficient to meet local needs of its citizens, however for special needs they have to move to higher order units based on requirements.

Table : Master Plan Area: Proposed Land-Use Share

LEGEND	AREA (sq.m)	PERCENTAGE OF LAND-USE
Commercial	1142865.85	4.45
Commercial proposed	786974.14	3.06
Industrial	127808.85	0.49
Industrial proposed	423335.14	1.64
Agriculture	5518244.14	21.49
Open space	171339.14	0.66
Open space/recreational proposed	72259.14	0.28
Pipe line	20162.85	0.078
Public & semi public	505461.14	1.96
Public & semi public proposed	108507.14	0.42
Railway land	410848.14	1.59
Residential	8849056.14	34.46
Residential proposed	3307398	12.88
River & water bodies	1417267.14	5.51
Road	2816575.14	10.96
Total area	25,678,102.23	100

8.7 Land Use pattern:

In our context, no settlement functions within the bounds of single use zone. Some mixed land uses are recommended, amongst compatible land uses to give more variety, options and make it functional and easily operational. Proposed land use structure for this plan has been decided taking into consideration of minimum dislocation of existing land use pattern, and establishment of living area and work place relationship.

8.7.1 Residential use:

It is observed that existing residential areas are all scattered, spontaneous and grossly underutilized with very low density. In this plan, emphasis is laid on increasing the density so as to achieve optimum utilization of available land, and relative harmonious disposition of areas in relation to other land uses for efficient functioning of the area.

Total area earmarked for residential use for the future population is 330.00 hectares with existing 884 hectares, which forms 46.36 % of total developed area. Residential areas are further

divided in 3 Zones on other basis of densities. These are high density, medium and low density with proposed densities of less than 50 persons per hectares and 50-100 persons per hectares and 100-150 persons per hectares respectively. There is ample scope of residential land development schemes in the master plan area.

TABLE : Anticipated Population in Various Residential Density Zones

Density	Density Range (Population per hectare)	% of residential area	% of estimated population to accommodated
High	less than 50 persons	19%	28%
Medium	50-100 persons	32%	41%
Low	100-150 persons	49%	31%

8.7.2 Commercial use:

The present Barpeta Road market centre is envisaged to grow further and become a specialized commercial centre of the area due to scope for its expansion. It would include wholesale market, retail shops, services shops, daily/ weekly markets etc. and act as a community centre for the region. Other commercial activities will be scattered at cluster centres and sector centres in a hierarchical manner to relieve the pressure on the main market areas

Total area earmarked for commercial use is 78.69 hectares with existing of 114.28 hectare which is 7.51%. Of the total developed area.

Hierarchy of commercial centers provided for the planning area for the plan period is as follows:-

TABLE

Sl. No.	Planning unit	Population served	Commercial Area per 1000 persons (sq.mt.)	No.of shops.
1	Cluster centre	1000-4,000	220	1 for 110 person
2	Sector centre	5000-20,000	300	1 for 200 person
3	Community centre	25,000-1,25,000	500	1 for 200 person

i) Barpeta Road shall be developed as a community centre with the distribution of activities like shopping (retail, limited wholesale, services, repair), informal shopping ,commercial offices, cinema ,hotel , guest house, Nursing homes, service industries, auditorium, library , weekly markets ,local govt. offices , Bus terminal, Fire stations, police ,electric substation, post and telegraph , petrol pump, conveniences residential etc.

ii) kharabari, Uttar Athiabari, Kalahbhanga, Nichuka shall be developed as sector centres with distribution of activities of shopping (retail, service, repair) informal shopping, commercial offices, weekly markets, conveniences, residential etc.

iii) There will be number of cluster centres with distribution of activities like shopping (retail service, repair), informal shopping, conveniences, residential etc.

Further provisions should be made for informal sector activities at the rate of, Community centre : 3 - 4 units per 10 formal shops; Government and commercial offices: 5 to 6 units per 100 employees; Hospitals : 3 - 4 units per 100 beds; Schools/ Colleges : 3 - 4 units; Parks: 2-5 units each; Residential : 1 unit per 100 population; Industrial: 5-6 units per 1000 employees.

8.7.3 Industrial use:

An area of 42 hectares, constituting 1.64% of developed area is recommended which is located at Satbainirtup 1, Satbainirtup 2 and 2nd Chengelia area for light and other medium hazardous industries which are to be established with the recommendations of Industries Department and Pollution Control Board. The trend of growth of industries shall be similar to the nature of existing industrial activities of the area and actual siting of the industries shall be governed by the pollution control norms and other regulations formed by the concerned line Departments like Industry, Forest, Environment etc. of the State Govt.

As per study conducted by Central Pollution Control Board; apart from the sensitive areas, entire master plan area is suitable for low air and medium water polluting industries, excluding Satbainirtup1, Satbainirtup 2 and 2nd Chengelia area, which are suitable for medium air and water polluting industries.

The impact due to very high air polluting industries such as large units of cement plants, thermal power plants, fertilizer industries, petrochemical industries, integrated iron & steel plants, aluminum / zinc /copper smelters, pulp and paper etc. are more than 10 km, and generally not recommended for the planning area.

Uses permissible in industrial zones are auto supply store and show room for motor vehicle and machinery, automobile service and repairing stations, banks, canteens and eatery, housing serving the industries, commercial/business offices, community hall and welfare centre, contractor plant and storage of building materials, convenience shopping centers, cottage handloom and household industries, dispensary, existing villages, general industries as in Annexure-A, indoor games hall, integrated township, other govt. services and facilities, night shelter, nursery, horticulture and orchards, open air theatres, parks, playgrounds, recreational area, piggery, police station, outpost and fire station, post office, telephone exchange, telegraph offices, industrial research and development centre, residential dwelling low income group, restaurant, cafeteria, retail shop, service centre, sewerage treatment plant, storage of petroleum and other inflammable materials, storage, warehouses, go-downs, vending booth, vocational training centre, water treatment plant, other industries not included in Annexure -A are allowed in Medium Industrial Zone subjected to clearance from Industries Department and Pollution Control Board.

9 CHAPTER :PROPOSED PROJECT'S BRIEF AND TENTATIVE FUNDING SOURCE.

An assessment of future population and its' future characteristics is the basic requirement for preparation of a development plan of a human settlement. However it is equally difficult proposition to work out exact estimates of future population of a settlement, because of the factors, on which the growth depends, cannot be foreseen accurately.

While arriving at the projected figure the following factors were taken into account:

- i) Natural growth of population of the area
 - ii) Trend of migration of population from vast rural hinterland and expansion of saturation of adjoining Area.
 - iii) Various development projects being taken up in the planning and its adjoining areas.
 - iv) Availability of vacant land and existence physical barrier such as low, Marshy flood prone area.
- Following projects are in progress in Barpeta Road Master Plan Area.

Sl. No.	Name of Scheme	Project Detail
1	10% Pool Fund	Multi Utility Building at ward no.-6.
2	15th Finance	R.C.C. Drain at ward no. -2
3	5th Finance	Market Complex at ward no. -9
4	5th Finance	Market Complex at ward no. -9
5	GIA	Mohan Lal Choudhury Park at ward no. -6.
6	PMAY(U)	Sanctioned- 1340 no. of House. Grounded - 603 no. of House.

Moreover a site for HOUSING FOR ALL SCHEME has been proposed in Kalah bhanga.



Mohan Lal Choudhury Park at ward no. -6.

10 CHAPTER 10: DISASTER PLAN

10.1 FLOOD:

As the monsoon sweeps through North east India, much of Assam is under water yet again. Assam with its vast network of rivers are more prone to natural disasters like flood and erosion, which has a negative impact on overall development of the State. The Brahmaputra and Barak rivers with more than 50 numbers of tributaries feeding them, causes the flood devastation in the monsoon period each year. The flood and erosion problems of Assam is singularly different from other states so far as extent and duration of flooding and magnitude of erosion is concerned and is probably the most acute and unique in the country. During the year 2004 and 2014 the South bank tributaries of Brahmaputra in lower Assam, experienced flash floods of high magnitude. Barpeta is one of the disastrous flood prone district of Assam. The district is prone to severe flood hazard by the rivers Manas, Beki, Pahumara, Chaulkhoa, Kaldia etc.

The flood havoc is more pronounced if simultaneously the mighty Brahmaputra is in spate. The measures taken so far to mitigate flood problem in the district are now proved to be inadequate. The Barpeta district of Assam covers an area of 3245sq.km comprising 4.2% of the total area of the state. The district has fascinating diversified landscape sloping from north to south which includes highlands covered by forests, plain fertile lands suitable for agricultural activities and low-lying areas containing water bodies and swamps. Flood is a perennial problem and all kinds of common flood damages prevail in the district. Flood cause large scale damages to the socio-economic life of the people as well as to the ecology and environment of the district to a certain extent. During monsoon period these rivers are over loaded due to heavy and continuous rain spells.

Barpeta Road is to be considered as the commercial hub of Barpeta district. The River Manas is one of the most important tributary of the mighty Brahmaputra River, it touches Barpeta road. Physical as well as human-induced causes are responsible for the causes of floods in Barpeta Road. Physical causes are- Geological and Tectonic causes, meteorological causes and Physiographic causes etc. Human-induced causes especially- building activity, eventual urbanisation, construction of bridges/dams, deforestation, land-use changes etc. Basically this region mainly faces flash floods due to heavy spells of rain. The mostly flood affected villages in Barpeta roads are- Khoirabari, Nichuka 2nd , Nichuka 3rd, Monipur 1st part, Monipur 2nd part and Uttar Aithaibari etc.



The major impact of floods are-

1. Loss of human being and livestock.
2. Damage to the crops creating scarcity of food grains.
3. Disrupting all sorts of communication such as- roads/railways.
4. Damage to the infrastructure in flood prone areas.
5. Outbreak of epidemic.
6. Shortage of drinking water, disruption of sanitary, water supply and electricity.
7. Sediments occur at paddy fields losing its fertility.
8. Level of river rises as a result of erosion of river bank after every flood.
9. River Dolphin (Sihu), a rare species living in the Brahmaputra River is going to extinct day by day due to devastating flood every year.
10. The inland fisheries of Barpeta road are greatly affected.

10.2 EARTHQUAKE:

Earthquake is another most important disaster in Assam. As per the latest seismic zoning map of India, Barpeta District falls under High Risk Zone-v, where a maximum intensity can be expected. The notable great earthquakes which were responsible for causing great damages in Assam are-1897s, 1950s, 1984s, 2004 etc.

The major impacts of earthquake are-

1. Change in ecological and geographical balances.
2. Loss of human life, livestock & properties.
3. Disruption of all types of communication including road/ railway and mobile network & electricity.
4. Damage to the infrastructures like- buildings, roads, bridges, plants, factories, oil fields etc.
5. The mining process is badly damaged.
6. Catch fire in the building.
7. Outbreak of epidemic.
8. Shortage of food, drinking water, damage of water supply, sanitary
9. Landslide/erosion may occur at hilly places and erosion in plain areas.
10. Overall economy of the state will be greatly hampered and people become panic and fear.

10.3 OTHERS:

10.3.1 SOIL EROSION:

The soil erosion in Barpeta Road is mainly caused by the River Manas. The people suffers a lot in every year for this erosion of River Manas.

10.3.2 DEFORESTATION:

Assam will lose massive forest cover by 2028. Predicting such loss, the Indian Institute of Remote Sensing (IIRS) has identified increasing human population and subsequent demand on land for cultivation as the major reasons for forest cover depletion in Barpeta Road.

10.3.3 THUNDERSTORM:

A severe cyclonic storm, locally called 'Bordoisila' that is usually experienced at this time of the year, lashed several parts of Assam including Barpeta Road. It damages houses, blew away the tin roofs of a large number of houses, uprooted trees and electric poles and snapped power lines.

10.4 STANDARD OPERATIONAL PROCEDURE (SOP) ON DISASTER

SOP is nothing but a very simplified process that can be executed during or after any type of disaster. SOP details the regularly recurring work processes that are to be conducted or followed within an organisation. They document the way activities are to be performed to facilitate consistent conformance to technical & quality system requirements and to support data quality.

- a) Written guideline that precisely defines how operations are to be carried out.
 - b) An organisational directive that establishes a standard course of action.
 - c) Written guidelines that explain what is expected and required of the personal.
 - d) Standardisation of activities-
- ▶ Identify planned and agreed upon roles & actions.
 - ▶ Promotes coordination and communication amongst personal.
 - ▶ Simply decision making during potentially stressful conditions.

The main objective/ purpose of SOP are- people need consistency to achieve top performance. SOP will reduce system variation which is the enemy of efficiency and quality control. Everything should be clearly written in SOP so that employee can coach and support each other if there is documentation available or exactly how various tasks must be done and everyone knows what their co-workers are supposed to be doing. During post disaster period, this can also help to generate a more co-operative team approach to get all the daily task done correctly, everyday.

If a department is having a good SOP, the tasks to be executed by each and every employee of the department becomes mandatory. So during disaster, everyone will perform his duty as per SOP. No one will have to wait to get order from superior officer. SOP itself a written order that has to be followed by one strictly. There is a lot of scope for this SOP. If a department is having a good SOP, it can perform its duty satisfactorily during or post disaster period.

The nodal officer is the overall in-charge of disaster management plan. He will communicate with DDMA during any type of disaster. Under his guidance, teams are to be formed which will act as per discussion during disaster period such teams are- Awareness team, Search & Rescue team, Damage assessment team, Relief camp management team and Repair & Restoration team etc. The work/ tasks of these will depend on various phase, which are discussed as follows-

1. PRE-DISASTER:Capacity building (Training) and sensitization among departmental official & staff. Pre preparedness in case of a disaster like- flood, earthquake etc., collection of some construction materials like- bamboo, rope, wire, wood, sand and cement bags, first aid kit etc. will be kept ready. Coordination with District Disaster Management authority. Dissemination of information for early warning to general public with the Aegis of DDMA.

Private building is to be identified suitable for use for shelters by the department and circle. Prepare the list of such buildings and submit them to District Authorities. Ensure that buildings codes are strictly

followed by public, they should be made mandatory. Ensure that the new construction does not block natural drainage lines and also suitable guidelines for retrofitting may be issued.

2. DURING DISASTER: During disaster this department will provide technical manpower support to restore essential services and coordinate with DDMA. Alerts the field teams, the teams have to start working as per assigned to each team. Enquiring the availability of safe shelter for affected people and also enquire the availability of machineries and requesting the Owners to keep the machinery ready for deployment where necessary. Supply water, first aid and then contact with SOP of other department. Rescue the persons which are badly affected. Deputing the field staff from non-effected areas to assist staffs in likely effected areas. Staff on leave should return to headquarters and no leave shall be sanctioned at the time of disaster.

3. POST DISASTER: After the disaster this department will make assessment of destruction and report to District Administration. Identification of rehabilitation site. The affected areas should be surveyed in detail. If possible, it is to be tried to repair the damage structures by retrofitting. If it is not possible the matter should be discussed with district administration for demolition of the structure. Report of damages should be prepared. Estimates for repairing/ renovation should be prepared and to be submitted for financial sanction.

The affected people should be given shelter in a safe and hygienic place available with all temporary facilities like- water, toilet etc. separately for both men and women as per as possible. Proper implementation and enforcement of Assam Notified Urban Area Building Rules-2014 (ANUABR) & sensitization among stakeholders engaged for constructional work/ owners to use disaster resistant technologies.

11 CHAPTER UNIFORM ZONING REGULATIONS FOR BARPETA ROAD MASTER PLAN AREA

11.1 PLAN IMPLEMENTATION

11.1.1 Zoning Plan

Zoning means the method of accomplishing a suitable arrangement of different land use components of a town. Although it is an integral part of the overall plan yet it does not mean the only arrangement. Good zoning ensures right use of available land. In order to achieve the goals and objectives of the plan a zoning plan is prepared earmarking different use areas with suitable boundaries. This Zoning plan should be read in conjunction with the land use plan and zoning regulations appended herewith.

11.1.2 Zoning Regulations

Zoning Regulations play a very important role in controlling and promoting urban development and redevelopment in rational lines. They are also useful in limiting urban growth and in a broader sense can also be used for laying down broad directives in regional plan. Zoning regulations form an integral part of any Master Plan and these have been used extensively to control development of urban areas.

Zoning Regulations have been widely accepted as legal instrument of control and promotion of development and in fact it is the Zoning regulation that an ordinary developer comes into contact with while undertaking the development within the framework of any Master Plan. Thus, these regulations can do a great service in portraying the intension of the Master Plan and promotion its objectives.

Zoning Regulations would help in controlling density of development and land use in each zone in appropriate manner. Zoning Regulations for Barpeta Road Master Plan Area will follow the uniform zoning regulation as approved and notified by the Government vide No.226, Dispur the 16th December, 2000 published in the Assam Gazette Extra-Ordinary on 16th December, 2000.

11.1.3 PLAN ADMINISTRATION

The Master Plan and Zoning Regulation for Barpeta Road as presented here contains the broad policies and programmes for improvement and development of greater Abhayapuri area up to the year 2041. The administration of this plan from its initiation to the realization will be carried out within the frame work of the Assam Town & Country Planning Act, of 1956 as amended from time to time.

The Town & Country Planning Organization of the State Government besides preparation of the Master Plan and zoning Regulation for Barpeta Road will provide necessary guidance by rendering technical advice and by arranging proper scrutiny of the development schemes so as to ensure that the proposed development of Barpeta Road conform to the proposals contained in the Master Plan and Zoning Regulations.

Section 8 of Assam Town & Country Planning Act, 1959 empowers the Government to constitute a Development Authority for the Barpeta Road Master Plan area for enforcement control and implementation of development proposals as envisages in the Barpeta Road Master Plan. As per Section 13 of the same act all development to be undertaken within the Barpeta Road Master Plan area will be

subjected to technical scrutiny and approval from the development authority so as to conform with the Master Plan.

11.1.4 FISCAL PLAN

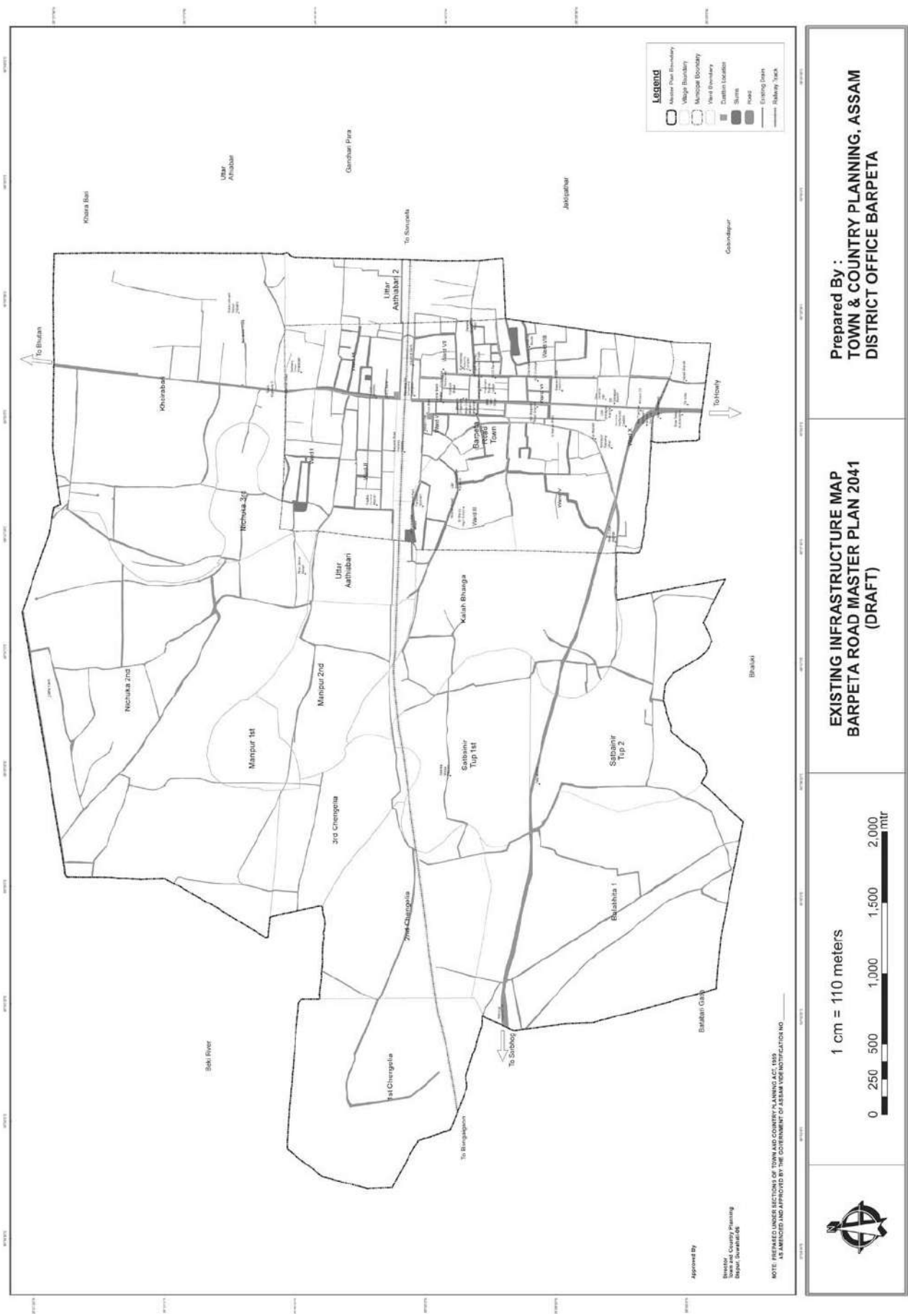
There may be some changes of this Draft Master Plan for Barpeta Road and therefore, no fiscal plan has been worked out at this stage. The final Master Plan when completed would provide a basis for preparation of five yearly development programmes and yearly fiscal plans for implementation.

11.1.5 CONCLUSION

Planning is a continuous process and the preparation of plan implies its actual translation into reality. The Master Plan for Barpeta Road is not just a land use classification elaboration but a vision document to make Abhayapuri a more sustainable city. Community participation in decision making process in the implementation of the Master Plan will make it a success.











1 cm = 110 meters

0 250 500 1,000 1,500 2,000 mtr

PROPOSED LANDUSE MAP
BARPETA ROAD MASTER PLAN 2041
(DRAFT)

Prepared By :
TOWN & COUNTRY PLANNING, ASSAM
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